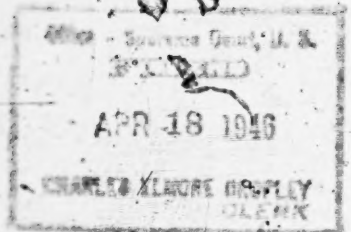


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No. 1130 89

In the Supreme Court of the United States

OCTOBER TERM, 1945

THE UNITED STATES OF AMERICA, APPELLANT

v.

NATIONAL LEAD COMPANY, TITAN COMPANY, INC.,
AND E. I. DU PONT DE NEMOURS AND COMPANY,
INC.

APPEAL FROM THE DISTRICT COURT OF THE UNITED
STATES FOR THE SOUTHERN DISTRICT OF NEW YORK

STATEMENT AS TO JURISDICTION

**In the District Court of the United States
for the Southern District of New York**

Civil Action No. 26-258

UNITED STATES OF AMERICA, PLAINTIFF

NATIONAL LEAD COMPANY, TITAN COMPANY, INC.,
AND E. I. DU PONT DE NEMOURS AND COMPANY,
DEFENDANTS

STATEMENT AS TO JURISDICTION

In compliance with Rule 12 of the Supreme Court of the United States, as amended, the United States of America submits herewith its statement particularly disclosing the basis upon which the Supreme Court has jurisdiction on appeal to review the judgment of the District Court entered in this cause on October 11, 1945. A petition for appeal was filed on December 10, 1945, and is presented to the District Court herewith, to wit, on December 10, 1945.

JURISDICTION

The jurisdiction of the Supreme Court to review by direct appeal the judgment entered in this cause is conferred by Section 2 of the Expediting Act of February 11, 1903, as amended (32 Stat. 823; 36 Stat. 1167; 15 U. S. C. 29), and Section

238 of the Judicial Code, as amended (36 Stat. 1157; 38 Stat. 804; 43 Stat. 938; 28 U. S. C. 345).

The following decisions sustained the jurisdiction of the Supreme Court to review the judgment on direct appeal in this case:

United States v. Crescent Amusement Co.,
323 U. S. 173;

Interstate Circuit, Inc. v. United States,
306 U. S. 208;

United States v. American Tobacco Co.,
221 U. S. 106.

STATUTE INVOLVED

The pertinent provisions of Sections 1, 2, and 4 of the Act of July 2, 1890, 26 Stat. 209, as amended, 15 U. S. C. 1, 2 and 4, commonly known as the Sherman Act, are as follows:

SEC. 1. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal.

* * * Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a misdemeanor.

* * *

SEC. 2. Every person who shall monopolize or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor.

SEC. 4. The several district courts of the United States are hereby invested with jurisdiction to prevent and restrain violations of this act; and it shall be the duty of the several district attorneys of the United States, in their respective districts, under the direction of the Attorney-General, to institute proceedings in equity to prevent and restrain such violations. * * *

THE ISSUES AND THE RULING BELOW

The complaint filed by the United States in this case charges National Lead Company, Titan Company, Inc., and E. I. du Pont de Nemours and Company (hereinafter respectively referred to as National Lead, Titan and du Pont) with being engaged in a combination and conspiracy to restrain and to monopolize interstate and foreign commerce in the titanium pigment industry.

After trial of the case the district court filed an opinion stating that National Lead had been a party to a world-wide patent pool of all present and future patents of the parties; that these agreements covered an entire industry and divided the world into exclusive marketing territories for the various parties with respect to commodities both protected and not protected by patents; and that the agreements had the purpose and effect of suppressing imports into and exports from the United States. The court held that the agreements were unlawful under the Sherman Act and that du Pont had become a

member of the combination with foreign concerns. The opinion states that the effect of the agreement between National Lead and du Pont to exchange all of their present and future patents and patent applications, and to exchange technical information, had been to confront any new-comer in the industry with a veritable jungle of patent claims and that the patents, "through the agreements in which they are enmeshed and the manner in which they have been used, have, in fact, been forged into instruments of domination of an entire industry." This exchange, the court held, was used and was available for use as an instrument of restraint to continue the mastery of the market which National Lead and du Pont had achieved by means of the illegal international agreements. The opinion further states that the net effect of the agreement between National Lead and du Pont was that "a business, originally founded upon patents which have long since expired, is today less accessible to free enterprise than when it was first launched."

The court declared that the plaintiff was entitled to a decree which would restore titanium to a system of free competition and would destroy the means of preventing, and the power to prevent, this development.

The findings of fact filed by the district court show, among other things, the following:

National Lead and du Pont together manufacture 100% of all of the composite titanium pigments, and approximately 90% of the pure titanium pigments, manufactured in the United States. The only other companies producing pure titanium pigments in the United States held licenses to use du Pont's titanium pigment patents. These licenses restricted the amount of pure titanium which could be produced under the du Pont patents and only after the present suit had been started were the restrictions on output cancelled by mutual consent of the parties. National Lead and du Pont had pooled all of their titanium pigment patents and patent applications on a royalty-free basis. Du Pont enjoyed the patents of the foreign associates of National Lead and the latter enjoyed the use of du Pont patents on a royalty-free basis. National Lead and du Pont had also exchanged technical information relating to the industry until May 1940, by which time the titanium pigment business had become a mature industry. National Lead and du Pont had secured a monopoly on technical information relating to the manufacture and use of titanium pigments and they dominated and controlled the manufacture and sale of such pigments to the exclusion of all actual or potential competition in the United States. There were no imports of such pigments into the United States from the foreign co-conspirators and no exports by the defendants into

the territories of the foreign co-conspirators except upon their request.

The decree entered by the district court cancels the agreements made by the defendants which the court had found to be illegal and enjoins them from entering into similar agreements in the future; requires National Lead and Titan to present within a year a plan for divesting themselves of their interests in foreign manufacturers of titanium pigments; and requires each defendant to grant to any applicant a license under all of its titanium pigment patents presently owned or issued within five years from the decree, at a uniform, reasonable royalty. The last requirement is subject to the condition that the applicant grant reciprocal rights under its patents. The decree further provides that, during a period of three years from its date, such license or reciprocal license may, at the option of either party, provide that the licensor shall furnish the licensee, at a reasonable charge, technical information relating to the methods and processes used by the licensor in the commercial practice of the licensed patents.

The Government has assigned as error the failure of the district court—

(a) to require each defendant to license its existing titanium pigment patents without royalty until the district court shall have determined, on application by any defendant, that the effects of

the defendants' illegal combination have been fully dissipated;

(b) to require National Lead and du Pont each to submit a plan providing for the divestiture of approximately one-half of the plant and assets used by it in the titanium pigment business;

(c) to require National Lead and du Pont to furnish to any applicant, at a reasonable charge, technical information relating to the manufacture of titanium pigments, without confining this requirement to methods and processes used in a licensed patent and without making the furnishing of reciprocal information by the applicant a condition of this requirement.

THE QUESTIONS ARE SUBSTANTIAL

The basic question presented on this appeal is whether the decree which has been entered gives the relief necessary to undo the effects of a combination under which the defendants have prevented any substantial competition from others and have attained a position of dominance in the titanium pigment industry. The Government's contention is that the provisions of the decree are insufficient to bring to an end the defendants' dominance in the industry and to give the relief which the district court said in its opinion, the decree should provide—"restore titanium to the system of free competition". There is thus presented the question whether this Court should modify the decree "lest the public interest not be ade-

quately protected by the decree as cast." *United States v. Crescent Amusement Co.*, 323 U. S. 173, 186.

For years the defendants have had the benefit of an exchange of patents among themselves, and with their foreign associates, on a royalty-free basis. The defendants should be required to extend to others the privilege of royalty-free licensing until the effects of their illegal combination have been fully dissipated. This, and other relief, is essential in order to enable newcomers in the industry; or the two small producers presently licensed by du Pont, to meet the advantages given the defendants by reason of their trade connections, customer position, trained personnel, patents and technical information, achieved under noncompetitive conditions which have led to a duopoly in the industry.

The proposed relief is not in conflict with the ruling in *Hartford-Empire Co. v. United States*, 323 U. S. 386, which set aside a requirement for royalty-free licensing for the life of the defendants' patents, upon the ground that this requirement amounted to a confiscation of the patents and constituted the imposition, in an equity proceeding, of a penalty for past violation of the statute. The proposed relief would carry out the principles applied in the decisions holding that, where a patent has been licensed upon conditions or agreements which are beyond the scope of the patent

monopoly and have the effect of restraining competition, the courts will not entertain suit for infringement of the misused patent until the effects of its improper use have been fully dissipated. *Morton Salt Co. v. Suppiger Co.*, 304 U. S. 488, 493; *B. B. Chemical Co. v. Ellis*, 314 U. S. 495, 498.

The provisions of the decree relating to furnishing technical information are also, in the Government's view fatally deficient. The court's opinion states that the basic patents in this industry have expired. The decree, by providing for furnishing technical information only as to methods and processes employed in licensed patents, does not reach the fund of technical information accumulated by the defendants over the years in which they were exchanging such information. The evidence shows the great importance which the defendants attached to this exchange. The decree should provide for furnishing such information to others at a reasonable charge if it is to afford them reasonable opportunity to compete effectively.

The decisions of this Court establish that partial dissolution may be, and frequently is, a necessary means of destroying the effects of a combination which has captured a substantial part of the market for a commodity, by integrating competitors under single ownership or control. The present appeal raises the novel and

important question of the power of a court, in a Sherman Act proceeding, to require partial divestiture where two corporations, not under common control, have attained dominance in the industry by means of agreements in illegal restraint of trade.

National Lead and du Pont each has two separate major operating titanium pigment plants. One of National Lead's is located on the East Coast and one at St. Louis. Those of du Pont are located in Maryland and New Jersey. The Government therefore believes that it is entirely feasible for each of these defendants to transfer one of its plants to a new corporation and to sell the stock of such corporation to persons not connected with the present combination. But in any event the Government merely requests that the decree require each of these defendants to present, within a stated time, a plan for such partial divestiture of its assets. The objective sought is bringing about a situation in which there would be at least four corporations in the industry of comparable productive capacity.

We believe that the questions presented by this appeal are substantial and that they are of public importance.

Respectfully submitted.

J. Howard McGrath,

J. HOWARD MCGRATH,

Solicitor General.

United States District Court

SOUTHERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA,
Plaintiff,
against.

NATIONAL LEAD COMPANY, TITAN
COMPANY, INC., E. I. DU PONT DE
NEMOURS AND COMPANY,
Defendants.

Civ. 26-258

Appearances:

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Of Counsel.

RIFKIND, D. J.

By its complaint the United States alleges a cause of action under sections 1 and 2 of the Sherman Act. 26 Stat. 209, 15 U. S. C. A. §§ 1, 2. Its prayer is for an injunction to restrain the alleged violations of the statute and for ancillary remedies to make the court's mandate effective.

The defendants are National Lead Company and E. I. du Pont de Nemours & Company, Inc.,¹ the two principal producers of titanium pigments in the United States and the two largest producers thereof in the world; and Titan Company, Inc., wholly owned by NL and in turn the owner of substantial stock interests in the following corporations, producers of, dealers in titanium pigments: BTP, TG, SIT, TAS and TK.

The complaint charges that

"Beginning on or about July 30, 1920, defendant National and co-conspirator Titan A/S, and the remaining defendants and co-conspirators, and others to plaintiff unknown, on various dates thereafter, continuing at all times thereafter to the date of the filing of this complaint [June 24, 1944], have been continuously engaged in a combination by the means and methods hereinafter set forth, in restraint of, and to monopolize, the aforesaid trade and commerce in titanium compounds among the several states of the United States and with foreign nations and have been and are now parties to contracts, agreements, and understandings in restraint of such trade and commerce, all in violation of Sections 1 and 2"

of the Sherman Act.

The evidence supports the allegation in every material respect.

Titanium is a very abundant element. The principal ores which yield titanium in commercial concentration are ilmenite and rutile. Titanium compounds and particularly titanium dioxide possess the characteristics of opacity, great hiding power, high tinting strength and chemical inertness. These properties make it superlatively suitable for the manufacture of white paint and valuable in the production of rubber, glass, paper and several additional materials.

The commercial development of titanium compounds is founded largely upon the work of three groups of chemists working independently at and about the time of the first World War. In the United States, at Niagara Falls, New York, Messrs. Barton and Rossi developed a process for the manufacture of titanium compounds. Patents were issued to them; and these they assigned to TP, a corporation formed for the purpose. In Norway, Gustav Jebsen and his associates, interested in the utilization of a large ilmenite deposit, developed another process. The patents which were granted thereon were assigned to TAS, organized for the purpose of exploiting them.

In France, Joseph Blumenfeld invented and procured patents for a third process. Terres Rares acquired these patents.

In 1920 NL held 10% of the stock of TP and had an option to acquire up to 50% of its stock. NL thereupon negotiated an agreement with TAS which was executed and went into effect on July 30, 1920. This agreement became the basic charter for the world-wide regulation of production and commerce in titanium compounds.

It marked the birth of a new industry. In the course of the ensuing twenty years titanium pigments outstripped the production and sale of lithopone and white lead. In the

United States production rapidly mounted and by 1940 more than 100,000 tons of pure TiO_2 , having a value in excess of \$40,000,000 were manufactured and sold. In Europe and other parts of the world, too, the industry took serious hold and production mounted to approximately one third of the United States tonnage. By 1944 American production had risen to 133,000 tons of pure TiO_2 . Most of the sales were not in the form of pure TiO_2 but in the form of extended pigments—that is, pigments composed of TiO_2 chemically united or mechanically mixed with other ingredients.

Throughout this period prices were repeatedly reduced and only once, in 1941, increased.

At or about the time of the outbreak of World War II [this point of time is taken arbitrarily] we find this industry predominantly occupied in the United States by two producers, NL and DP, who supplied, in 1939, 73,645 tons out of a total of 82,940 tons. The balance of 9,295 tons is produced by American Zirconium, a licensee of both NL and DP and by Virginia Chemical, a licensee of DP². We further find a complete absence of imports of titanium products from abroad, and complete absence of exports from the United States, except to the countries of the Western Hemisphere.

In order to understand how this condition of affairs came to be, it is necessary to review the provisions of the mentioned contract of 1920 and briefly to relate the history of the persistence of its principles in more than 60 agreements subsequently executed.

The 1920 agreement between TP and TAS provided:

The preamble recited that each of the parties owned and expected to own certain patents and that each desired to

obtain rights under the patents owned by the other, within the "licensed field".

"Licensed field" was defined to include all substances, consisting of or containing above two per cent. of titanium, or a compound or compounds thereof, unless such substances contained by weight more than five per cent. of a metal other than titanium in its purely metallic state, and all apparatus, methods, and processes useful in the obtaining or manufacture or use of said substances.

TP agreed to grant to TAS and TAS accepted a license, exclusive of all others including TP, to manufacture, use, and sell each and every invention improvement, or subject matter in the licensed field, under existing or future letters patent; but only in or for territories outside of North America and South America.

TAS agreed to grant to TP and TP accepted a license, exclusive of all others, including TAS, identical in scope and extent except that it was limited to and for the territories within North America (defined to include Central America and Panama).

Each party granted the other a non-exclusive license to use or sell, under patents issued by South American countries, but only in South America.

The parties agreed to make available to each other copies of patent applications; and detailed provision was made for the prosecution of patent applications and the maintenance of patents within the territory of each party respectively.

Each party agreed never to question the validity of the patents of the other.

TAS appointed TP its sole agent for the introduction into and sale in North America of *all products of TAS in*

the licensed field. Such importation into the United States could take place only upon the order of the agent; and the sales in North America were to be made at prices and upon conditions fixed by the agent.

TP similarly appointed TAS its ~~sole~~ agent for introduction and sale, outside of North and South American of all TP products in the licensed field.

Each party was permitted to import into the territory of the other finished articles, such as point, glass, rubber, in which a titanium product had been used as a raw material—but only when the titanium product did not constitute such an important part of the finished article that its sale would substantially interfere with sales of its own products by the other party within its own territory.

Each party agreed to impart to the other full and accurate technological information relating to the licensed field, and to permit plant inspection (exclusive of research laboratories).

Article XIV of the agreement conferred upon each party the right to grant licenses under its own patents or sublicenses under the other's patents, on condition that every such licensee or sublicensee would

- a) grant to the party to the 1920 agreement, other than its licensor, exclusive licenses under all its patents, present and future, in the licensed field, identical in character, territorial scope, and duration to the rights granted by the 1920 agreement by the parties thereto;
- b) appoint such other party its sole agent on the same terms as obtained between the parties to the 1920 agreement;

- c) would impart to such other party technological information to the same extent as obtained between the parties to the 1920 agreement;
- d) would abide by the territorial allocation of the 1920 agreement.

The agreement of 1920 was to continue in effect until 1936, and was then to be automatically renewed for successive ten year periods, each party having the right to cause a termination by notice given at least five years before the end of such period.

By an agreement executed simultaneously with TP and TAS, NL bound itself to respect the contract of 1920, promptly to assign to TP all its then owned or thereafter acquired patents, inventions and improvements relating to the licensed field, throughout the world, and to communicate to TP all its technical information in the licensed field.

It is manifest that by the terms of this agreement the parties had divided the world into two trade areas or territories; that each party agreed not to trespass into the territory allotted to the other; and that all commerce between the two territories in titanium products was, as far as these parties were concerned, interdicted and could proceed only by the grace of their mutual consent. The suppression of this commerce was not limited to patented articles or to articles produced by patented processes but extended to all products within the "licensed field".

The objects of this arrangement have not been left unstated, to be ascertained by inference and deduction. They are disclosed by a large volume of written correspondence, uninhibited by any respect for, or indeed any apparent awareness of the prohibitions of the anti-trust laws.

These explicitly stated objects are: 1, the elimination of competition; 2, the advancement of the art through the exchange of technology. It was the belief of the architects of this foundation of the industrial structure they hoped to build thereon, that the second object could not be attained except in a climate of cooperation engendered by the achievement of the first object. And it was their intention that the advance in the art, accelerated by the exchange of patents, patent applications and "know how", should as far as possible remain the private prize of the parties, and constitute their shield and weapon against outsiders.

This intention was carried into effect.

An examination of the evidence reveals the perpetuation of what the parties called the principles of the 1920 contract by a network of agreements which have confined the international trade in titanium products within the pre-ordained channels where-through it moves only by the grace and under the regulation of NL and its foreign associates. It is unnecessary to rehearse the history and detail of that development. Both are recited in the Findings of Fact. A very brief summarization is all that will be attempted here.

In 1927 NL acquired 87% of the stock of TAS. Jensen retained 13%.

In 1929 NL organized Tinc, which thereupon acquired the rights and assumed the liabilities of TAS under the 1920 Contract. Tinc became NL's corporate pocket for the deposit of its holdings in foreign titanium enterprises. By 1932 NL had acquired all of the stock of TP and in 1936 it acquired all its assets and assumed its obligations.

On May 1, 1925, by agreement between TAS and French interests, SIT, a French corporation, was estab-

lished to manufacture and distribute titanium products but only within the territory of France and its colonies (except those appurtenant to North and South America). Both TAS and NL acquired substantial interests in SIT. On March 3, 1927, the arrangements between TAS and SIT were confirmed and elaborated to give explicit expression to the provisions of the 1920 Contract relating to territory, competition and technological collaboration.

In 1927, by agreement between TAS (acting also in behalf of and in the interest of NL) and IG, a German corporation was established, called TG. IG and TAS became the joint owners of TG. IG agreed that it would not engage in the titanium business except through TG, to whom it assigned all its titanium patents and to whom it agreed to assign all its future titanium patents. To TG was assigned a territory consisting of Germany, Russia, Austria, Hungary, Czechoslovakia, Switzerland, Roumania, Serbia, Croatia, Slovenia, Bulgaria, Greece, Turkey, Japan, China, and Spain. TAS and TG simultaneously entered into an agreement which embodied the principles of the 1920 Contract.

NL was in good part motivated in bringing about these German agreements by the desire to be free of the potentially very dangerous competition of so powerful a producer as IG. The evidence is incapable of any other inference.

By 1933 NL was acting in the foreign field through Tinc. By a series of agreements entered into in February and March, 1933, production and distribution of titanium products within the British Empire (exclusive of North and South America) were brought within the orbit and subjected to the regulation of the principles of the 1920 Con-

tract. The agreements were among Tinc, JCI, ISC and GW. Pursuant to these agreements BTP was formed and became the assignee and licensee of existing and future titanium patents of the parties to the agreement; it also became subject to and beneficiary of the principles of exclusive territorial allocation and patent and technological collaboration of the 1920 Contract.

Meanwhile, significant events were taking place within the sphere of relations between the producers already mentioned and other producers, both American and foreign, whose processes stemmed from the inventions of Joseph Blumenfeld. But I shall depart from the chronological order in order to complete the recitation of events pertinent to the producers whose processes were rooted in the Jebesen-Barton and Rossi inventions.

Canada was NL's territory under the 1920 Contract. But danger of independent competition in that market developed from the plans of Laporte. In 1937, NL and CIL entered into agreements for the formation of CTP, to whom Canada was assigned as its exclusive territory. CTP became the beneficiary of all present and future titanium patents of both its founders. It was subjected to the restrictions and given the benefits of the principles of the 1920 Contract. The threat of Laporte's competition was eliminated by an agreement under which Laporte's Canadian business and patents were purchased and Laporte covenanted to stay out of the titanium business in Canada for 15 years.

In 1936, Tinc, IG and TG, a Blumenfeld company, TR and a Japanese company, KK, joined in the formation of TK to engage in the manufacture and sale of titanium products. The territory assigned to TK was the Japanese

Empire. This agreement departed in some respects from the principles of the 1920 Contract but it adhered strictly to the principles of exclusive territorial allocation and the elimination of competition between territories. In the new Japanese company ownership was divided as follows: 50% to KK; of the remaining 50%, TR got 30% and Tinc and IG 70%. This division of interest between Tinc and IG on one side and the Blumenfeld companies on the other was dictated by agreements previously entered into which need now to be briefly mentioned.

It has already been stated that Joseph Blumenfeld had assigned his titanium patents to TR. TR in turn assigned or licensed them to Aussig of Czechoslovakia, Montecatini of Italy, Thann of France, Laporte of Great Britain and Commercial Pigments of the United States, who severally were engaged in the production of titanium products and exploited various markets in competition with the producers, already mentioned, who utilized the Barton-Rossi and Jebsen processes. Beginning in 1933, a series of agreements were negotiated and executed, the object of which was to bring this competition under the control of the parties.

- i. The first of these was the Aussig agreement, made in 1933, by TG and Aussig. This agreement regulated production, territory of sale, sales quotas, prices and patent exchange.

- ii. The Contrat a Quatre was executed in 1935 to take effect as of May 1, 1934. The parties were Thann and TR on one hand, and SIT and Tinc on the other. It regulated sales quotas, prices and patent exchange.

- iii. The Contrat de Livraisons was executed in 1935 by the same parties. To prevent the expansion of

producing capacity, the contract provided that each would supply the other with its surplus product to satisfy the other's deficiency.

iv. The Contrat a Six was executed at the same time. The parties were Thann, TR, Montecatini, Tinc, SIT, and TG. It regulated sales-territories and sales-quotas of each of the parties. All the parties agreed to give neither technical nor commercial assistance or assign any patent or grant any license to any outsider who intruded into the territories covered by the agreement. This agreement was renounced by Montecatini on December 31, 1938.

v. The British Empire was not embraced within the forementioned agreements. Sometime in 1936, BTP and Laporte entered into agreements whereby Laporte withdrew from the world market outside the British Empire and uniform prices were established in the British market. In 1941, BTP and Laporte entered into a quota arrangement with Laporte, establishing 80% as BTP's share and 20% as Laporte's share of the British market.

I return now to the United States and take up the thread of the story in 1931. Since this aspect of the case will require more detailed analysis, I shall but sketch its outlines to serve as a frame of reference for the discussion which is to follow. As already indicated, Commercial Pigments held the American rights under the Blumenfeld patents. Until 1931, the company engaged in manufacturing and selling pure TiO_2 . In 1931, these rights were acquired by Krebs, a corporation organized by DP and Commercial Solvents Corporation. DP acquired 70% of the stock of Krebs.

Krebs manufactured and sold titanium compounds until 1935, when DP acquired all its assets. Thereafter and to date, DP engaged directly in manufacture of titanium compounds. After a protracted period of negotiation between NL and DP, their respective titanium subsidiaries TP and Krebs, entered into a written agreement, dated January 1, 1933, which was executed in July of 1933. By the terms of this agreement they

i. exchanged irrevocable, non exclusive licenses, within the United States, to use all processes, methods, and apparatus relating to or in the "licensed field", whether or not patented or subject to patent, then or thereafter owned by them or otherwise at their disposal, with the right to sell products resulting from the exercise of such licenses in the United States, its colonies and possessions, Mexico, Central America, the West Indies and South America;

ii. agreed to exchange technical information and experience;

iii. agreed to assist each other to acquire an irrevocable, non-exclusive license, for the territory above described, under any patent or application owned by or otherwise at the disposal of third parties, under which one of them was itself licensed; and Krebs agreed that it would offer to any foreign associate of TP, before offering to any other person, the opportunity to acquire, upon mutually satisfactory terms, an irrevocable, non-exclusive license under any patent, then or thereafter owned or at the disposal of Krebs, relating to the "licensed field", issued in any country of Europe or in Great Britain;

- iv. released each other from infringement claims;
- v. agreed that the agreement might be terminated after December 31, 1933, on three years notice.

Before this agreement was executed there was an exchange of oral and written communications between NL and DP, of which more will be said hereafter. It is sufficient to indicate at this point that the DP agreement departed in several important respects from the requirements of Art. XIV of the 1920 Contract.

In each of the years 1937 to 1941, inclusive, DP and Tinc entered into agreements whereby DP granted to Tinc licenses, exclusive except as to DP, under specified titanium patents and applications of DP, in specified countries, with the right to grant sublicenses to TG, BTP, SIT and from 1939, to TK; and Tinc, with the consent of NL, granted DP non-exclusive licenses under specified United States patents and applications.

On or about May 1, 1940, the exchange of technical information between NL and DP was discontinued; and by agreement of January 1, 1941, the 1933 agreement was amended accordingly.

As already noted, there are in the United States only two other producers of titanium products, American Zirconium and Virginia Chemical.

American Zirconium began the manufacture of titanium compounds in 1934. NL and DP severally notified American Zirconium that it was probably infringing. On May 6, 1935, NL (through TP) entered into an agreement with American Zirconium for the cross-licensing of patents. The agreement in all material respects embodied the principles of the 1920 Contract. In lieu of royalties NL received 10% of the stock of American Zirconium.

In April, 1944, the agreement was cancelled and NL assigned its American Zirconium stock to the latter's parent corporation.

In July, 1935, DP and American Zirconium entered into an agreement dated January 1, 1935, whereby DP granted American Zirconium a non-exclusive license under specified patents, subject to a royalty on the "total quantity of titanium dioxide produced" and subject to a quantity limitation on the tonnage of "titanium dioxide made wholly or partly under the license". The quantity limitation was graduated from 3,000 tons at the inception of the contract to 9,000 tons in 1944 and thereafter. The limitation was from time to time somewhat relaxed and was cancelled on November 10, 1944, on recommendation of DP's Legal Department.

Virginia Chemical received a license from DP on August 5, 1937. Its terms were substantially similar to those of the American Zirconium license. The quantity limitations were eliminated at the same time and under the same circumstances as the corresponding change was made in the license to American Zirconium.

This concludes the barest outline of the history of the titanium industry. In detail, the elapsed quarter century is crowded with negotiations, conferences, correspondence and agreements. The men who participated in these were all articulate, literate and, with the exception of DP's Rupprecht, recorded what they saw, heard, said and thought with Boswellian fidelity. When the story is seen as a whole, there is no blinking the fact that there is no free commerce in titanium. Every pound of it is trammelled by privately imposed regulation. The channels of this commerce have not been formed by the winds and currents of competition.

They are, in large measure, artificial canals privately constructed. The borders of the private domain in titanium are guarded by hundreds of patents, procured without opposition, and maintained without litigation. The accumulated power of this private empire, at the outbreak of World War II, was tremendous. It was more difficult for the independent outside to enter this business than for the camel to make its proverbial passage through the eye of a needle.

For the purpose of the discussion which follows, it is convenient to segregate DP's relations with NL and the foreign producers from NL's relations with the foreign producers.

I. The case against NL and Tinc.

At the outbreak of World War II we find that NL and Tinc are, by virtue of agreement, members of a worldwide combination. The more intimate members of that combination are NL, Tinc, TAS, SIT, TG, BTP, FK and CTP. Among these, the closest cooperation prevails. Territories are allocated; patents and patent applications are interchanged and cross licensed; technological information or "know-how" of one is promptly made available to the others (except TK). Each operates in its own exclusive territory. When there is suspicion that a customer of one is shipping into the territory of another, investigation is promptly made with a view to suppressing the "illicit" traffic. Competition among them is non-existent.

A less intimate bond unites the members of this Titan family with the Blumenfeld group. No member of the latter group exports into NL's exclusive territory. NL does not export outside of the Western Hemisphere. For

the territory beyond NL's frontiers, quota arrangements and price agreements assure the absence of competition between the Titan family and the Blumenfeld group. In Japan both groups unite in a common enterprise.

And all this is the product of agreements.

Clearly this combination affects the interstate and foreign commerce of the United States. No titanium pigments enter the United States except with the consent of NL. No foreign-titanium pigments move in interstate commerce except with like approval. No titanium pigment produced by NL may leave the ports of the United States for points outside the Western Hemisphere.

One of the objects of the combination is to suppress competition.

On January 12, 1927, the president of NL writes to Evans McCarty, its vice-president, and one of the chief architects of the combination:

"The titanium patents expire in 1936 unless extended in ways not at present known to us. . . . Therefore, with us in the United States and with the Norwegian Company, there is a common need to exploit titanium pigments and, at the same time, protect ourselves; so that after the expiration of patent rights, we may have the manufacture and sale thereof under our control so as to continue to reap the harvest from the seed we are now sowing. If you, therefore, could formulate a plan satisfactory to Dr. Jebsen, whereby we could arrange to pay a royalty to the Norwegian Company similar to that he proposed to ask from the German Company, under an agreement that the National Lead Company would endeavor to organize companies in Germany, England and such other European countries as it

desired—in each of which companies the National Lead Company should acquire and own at least one-half of the capital stock outstanding—I would personally look with favor upon such an arrangement”. (Pl. Ex. 70).

On April 27, 1932, Jebson writes to Major Barley, of Imperial Chemical Industries, Ltd., proposing the formation of a British company in keeping with the suggestion of NL's president. Therein he refers to the 1920 Contract and adds:

“In order to avoid competition and friction, it was agreed that each company should confine its activity of manufacture and sales to a definite territory”. (Pl. Ex. 112).

Prior thereto, on September 16, 1930, Jebson reported to McCarty concerning the early conversations with Aussig:

“I presented for discussion your suggestion of a pooling of the patents. It is not quite clear to me what is meant by this. We thought, however, that the idea was mutual cooperation and possible joint action to keep third parties out”, (Pl. Ex. 522).

He pointed out a number of obstacles in the path of such a scheme—but these were in fact overcome.

In April, 1931, Cornish, president of NL, finds himself obliged to contribute to the correspondence by reason of McCarty's illness. The subject under discussion is apparently the proposed arrangement with the Blumenfeld companies:

“May I call the proposed combination, for simplicity, a cartel?”

And he defines it.

"The whole purpose of the cartel is to obtain a monopoly of patents so that no one can manufacture it excepting the members of the cartel, and so can raise the prices by reason of such monopoly to a point that would give us much more profit on our present tonnage, but also prevent a growth in tonnage that would interfere with their greater profits in lithopone". (Pl. Ex. 183).

He voices objections based on business, not legal, grounds. His objections, however, were apparently not pressed.

Such was the purpose for which, and such were the means by which, NL, McCarty and Jepsen built their closed system. To have access to the patents of the combination, the stranger must not only have the consent of the member of the combination in whose "territory" he would operate, but he must adhere to the principles of the combination. The cornerstone of the system was the private regulation of international trade. The suppression of competition was the cement which held the superstructure in place.

Whether the form of association they created be called a cartel, an international cartel, a patent pool, or "a technical and commercial cooperation", is of little significance. It is a combination and conspiracy in restraint of trade; and the restraint is unreasonable. As such it is outlawed by Section 1 of the Sherman Act; and it is unimportant whether it also violates Section 2.

No citation of authority is any longer necessary to support the proposition that a combination of competitors, which by agreement divides the world into exclusive trade areas, and suppresses all competition among the members

of the combination, offends the Sherman Act. Hence we need only consider the adequacy of the defenses asserted against the case established by the plaintiff.

The system of territorial allocation and suppression of trans-Atlantic traffic in titanium compounds and pigments cannot be justified as ancillary to the grant of a license under a patent. True, the network of agreements did involve cross-licensing of patents—but it was not limited thereto. The agreements applied to patents not yet issued and to inventions not yet imagined. They applied to commerce beyond the scope of any patents. They extended to a time beyond the duration of any then-existing patent.

Ethyl Gasoline Corp. v. U. S., 1940, 309 U. S. 436, 456.

They embraced acknowledgement of patent validity with respect to patents not yet issued, nor applied for, and concerning inventions not yet conceived,

Pope Mfg. Co. v. Gormully, 1892, 144 U. S. 224;

U. S. v. Hartford-Empire Co., N. D. Ohio, 1942, 46 Fed. Supp. 541, 615.

They extended to countries, such as China, where no system of patent monopolies exists,

Interstate Circuit, Inc. v. U. S., 1939, 306 U. S. 208.

They regulated the disposition of the products after sale by the licensees,

U. S. v. Unixis Lens Co., 1942, 316 U. S. 241;

U. S. v. Bausch and Lomb Optical Co., 1944, 321 U. S. 707.

While it has been held that the owner of a patent may license whom he will or refuse to license;

Continental Paper Bag Co. v. Eastern Paper Bag Co., 1908, 210 U. S. 405,

it is now well settled that a license may not be used to extend the patent monopoly beyond its terms,

Morton Salt Co. v. Suppiger Co., 1942, 314 U. S. 488;

Ethyl Gasoline Corp. v. U. S., *supra*, 456.

And where there is a refusal to license (or refusal to license except on specified conditions which would extend the patent monopoly) which is the product of agreement or conspiracy, on part of the owners of competing patents, I believe, the law is offended to the same extent as the law is violated when several combine and agree not to do business with a particular customer or class of customers.

U. S. v. Colgate & Co., 1919, 250 U. S. 300;

U. S. v. A. Schrader's Sons, Inc., 1920, 252 U. S. 85;

U. S. v. Waltham Watch Co., S. D. N. Y. 1942, 47 Fed. Supp. 524, 531.

The agreements here involved offend in that respect, as well.

It is suggested that the 1920 Contract may escape the condemnation of the Sherman Act by recourse to the doctrine which validates covenants in restraint of trade when reasonably ancillary to a lawful principal purpose, such as the sale of a business;

U. S. v. Addyston Pipe and Steel Co., C. C. A. 6, 1898, 85 Fed. 271, *affd.* 175 U. S. 211.

Such a principal purpose is, in the case at bar, supposed to be the sale by TAS of its American business to TP, accompanied by a license under its patents; and conversely, the sale by TP of its foreign business to TAS, accompanied by a license under its patents.

The shortest answer to this suggestion is that, in fact, TAS had no American business to sell, and that TP had no foreign business to dispose of. At best, each had an opportunity and a hope. Certainly the world-wide territorial allocation was unreasonable in scope when measured against the business actualities. This is a case where if not the sole, at least one of the principal objects was "to restrain trade in order to avoid the competition which it has always been the policy of the common law to foster",

U. S. v. Addyston Pipe and Steel Co., 1898,
85 Fed. 271, 282;

Greater New York Live Poultry Co. of C. v. U. S., C. C. A. 2, 1931, 47 Fed. 2d 156, cert. den. 283 U. S. 837.

In each of the subsequent agreements which resulted in the creation of SIT, TG, BTP, CTP and TK, the same purpose, to restrain trade in order to avoid competition, was paramount.

It is suggested that this Court is without jurisdiction to consider conduct abroad, on part of foreign corporations, relating to the commerce of foreign nations.⁸ Unquestionably, if the gravamen of the complaint were to impeach the Aussig agreement as such, or the BTP-Laporte quota arrangement as such, the point would be well taken. But that is not the gist of the complaint. On the contrary, it has been alleged and proved that a conspiracy was entered into, in the United States, to restrain and control the com-

merce of the world, including the foreign commerce of the United States. The several agreements relating to manufacture and trade within the European markets are but some of the links in the chain which was designed to enthrall the entire commerce in titanium. The object of the government's attack is a conspiracy in the United States affecting American commerce, by acts done in the United States as well as abroad. It follows that the Sisal case⁶ rather than the Banana⁷ case is the pertinent analogue.

The argument has been advanced that this court cannot invalidate contracts with parties who are not within the court's jurisdiction and amenable to its order.⁸

The absence of NL's foreign associates will, of course, place a practical limitation upon the scope of the court's decree; it does not prevent the court from finding a violation as the facts warrant, and from restraining those within the reach of its mandate from continuing a conspiracy in defiance of the Sherman Act.

It is suggested that plaintiff has failed to establish injury to the public interest,

Appalachian Coals, Inc. v. U. S., 1933, 286
U. S. 344;

and that the defendants have proved substantial public benefit.⁹ The latter proposition, defendants derive from two lines of evidence. The first is that during the regime of the combination, the art has rapidly advanced, production has increased enormously and prices have sharply declined. The evidence does show as much; but it does not follow that the public interest has not been abused. Indeed, the major premise of the Sherman Act is that the suppression of competition in international trade is in and of itself a public injury; or at any rate, that such suppression is a greater

price than we want to pay for the benefits it sometimes secures. Nor does it necessarily follow that the advance of the art, the rise in production and the decline of prices are attributable to the effects of the combination. *Post hoc, propter hoc*, is an invalid argument whether used by the plaintiff or the defendant. Anyone is free to speculate whether, in the absence of the arrangement, the stimulus of competition might not have produced far greater strides in these beneficial directions. The economic theory underlying the Sherman Act is that, in the long run, competition is a more effective prod to production and a more trustworthy regulator of prices than even an enlightened combination.

The second line of evidence is that American producers cannot do business successfully in a cartelized world except on cartel terms; and that, to abstain from such business, would amount to a greater restraint on trade than is involved in joining the cartel; see,

Cartels: What Shall We Do About Them?

Milo Perkins, Harper's Magazine, November, 1944.

The validity of this argument has been the subject of congressional inquiry: Temporary National Economic Committee, 76th Congress, Monograph No. 40; Economic and Political Aspects of International Cartels, Committee on Military Affairs, U. S. Senate, 78th Congress, 2d Session. That kind of inquiry, rather than a judicial one, is appropriate to the evaluation of the merits of the proposition. For the courts it is conclusive that Congress has not yet validated such a solution to the problem. Until it does, private agreement and combination and private regulation may not substitute for legislation. Only Congress, not the courts, may grant the required immunity.

It is suggested that the truly vital issues of this case have become moot by the intervention of war with Germany, Japan and Italy; and that the complaint should be dismissed. Reliance is placed upon *U. S. v. Hamburg-Amerikanische Packetfahrt A.G.*, 1916, 239 U. S. 466. Several reasons dictate the rejection of this argument.

(1) The Hamburg case rests upon its own peculiar facts. The offending contract had come to an end by its own terms; as far as the Germans were concerned, it had also terminated by reason of war; and as far as the others were concerned, by the withdrawal of the Germans;

U. S. v. Aluminum Company of America,
C.C.A. 2, March 12, 1945, slip opinion, p.
1256.

"Besides, the contract was of such a kind that the exclusion of the German lines probably made impossible the realization of its purposes in any part," *ibid.*

In the instant case, the contracts with the Germans had not expired by their terms; and, at least to the moment of America's entry into the war, the parties did not intend or expect that war should or would involve a permanent divorce.

(2) This case abounds with evidence that the parties foresaw the possibility of interruption *causa belli* and made provision for dealing with the interlude and for resumption thereafter. At least this can be said with complete assurance that until the entry of the United States into the war, the contracting parties regarded the war as a tempo-

rary interruption, for which they would, after cessation of hostilities, make adjustments in a spirit of fairness and amity.

Peculiarly revelatory in this connection is plaintiff's Exhibit 512. It is the draft of a letter preserved in the files of Tinc, entitled, "Draft of letter from Titan Co., Inc. to be sent later, presumably after the war, to: I. G. Farbenindustrie, Titangesellschaft, British Titan Products Company and Ste. Inc. du Titane." The letter reports the amendment of January 1, 1941, to the NL-DP agreement of 1933, explains that war conditions rendered consultation with the addressees impractical and expresses a desire for their approval. When this was written, the United States was not at war; but England, France, Germany, and Italy were at war. One can not read Exhibit 512 without sensing the expectation, indeed the assumption, that the war may have interrupted the execution of the several agreements among the parties, it had not permanently disarranged the relations of the parties, and that the return of peace would bring a resumption of the established "co-operation". Much other evidence points in the same direction; and none of the evidentiary material created *ante litem motam* points in a conflicting direction. Upon the trial in the midst of war, the future resumption of relations with the Germans was emphatically repudiated.

The inference I draw is that there is a preponderant probability that the underlying combination or conspiracy persists and that, but for these proceedings, would resume the exercise of its restraining force on commerce to the extent that international conditions permitted.

(3). That some of the contracts have been terminated by war, it seems to me, is of relatively little significance.

For in a legal sense we mean no more thereby than that the contracts have become unenforcible. But these contracts, being in restraint of trade and violative of the anti-trust laws, were never enforcible. If the non-enforcibility of the contract were to render an action under the anti-trust laws moot, we would face the absurd result that only innocent combinations would remain available for judicial scrutiny.

It is suggested that the validity of the British and Canadian contracts has become moot by the application of the doctrine that cancellation or abandonment of provisions of a contract prior to final decree renders the question of the validity of such provisions moot.

Standard Oil Co. v. U. S., 1931, 283 U. S. 163;
U. S. v. U. S. Steel Corporation, 1920, 251
 U. S. 417, 445.

It should be noted that the authorities do not justify the statement of the rule in quite such broad terms.

U. S. v. Trans-Missouri Freight Assn., 1897,
 166 U. S. 290;
U. S. v. Sugar Institute, Inc., S. D. N. Y. 1934,
 15 Fed. Supp. 817, mod. 297 U. S. 553.

Injunctions, of course, relate to future conduct. The formal cancellation of a contract, or of a provision of a contract is a fact to be considered in determining whether, under all the circumstances, the unlawful action of the past is likely to recur in the future; the issue is the likelihood of continuance;

Swift & Co. v. U. S., 1905, 196 U. S. 375, 396.

The facts in the instant case with respect to the British and Canadian contracts are briefly these. At a pretrial conference held in this case on October 30, 1944, counsel for NL called attention to the existence of a new form of contract, then in a state of negotiation between NL and the British companies. At the trial, a copy of such a proposed agreement, not yet executed by the parties, was received in evidence. The named parties were ICI, ISC, GW, Tinc, BTP and NL. Similarly, there was testimony that negotiations were in progress among NL, CIL and CTP to revise the Canadian agreements.

This evidence shows that there is a disposition on part of defendants NL and Tinc to abandon illegal practices; it does not rise to the dignity of proof of abandonment. Nor is it necessary to recite here the precise changes which the parties are willing to introduce into their relations. To my mind these proposed agreements amount to little more than a statement of what defendants are willing to accept. Apparently, execution of the new agreements is awaiting some word of approval by the court. It seems, under the circumstances, that it would be more appropriate to examine them in connection with the framing of a decree, rather than as bearing on the question whether any decree is to be made for injunctive relief.

This branch of the case may be briefly summarized thus:

Agreements creating a world-wide patent pool of all present and future patents of the parties, covering an entire industry, and embracing a division of the world into exclusive territories within which each of the parties is to confine its business activities, with respect to patent protected commodities, as well as unpatented, for the purpose

and with the effect of suppressing imports into and exports from the United States, are unlawful under the Sherman Act; they constitute an unreasonable restraint of trade.

II. DP's part in the international cartel.

As to DP, the facts are by no means as clear. Stoutly it denies any complicity in the combination; and much of the evidence supports its denial. It did not subscribe to the 1920 agreement; the agreement it did sign, in 1933, deviated sharply from the form and from the principles of the 1920 agreement. In 1940, it withdrew from the exchange of technological information with NL. It competed with NL for the American market. It was never regarded by the Titan group as a full fledged member of their family. Its anomalous position was the subject of frequent discussion and apprehension among the Titan members, and efforts were made to convert DP into a fully conforming member.

In sharp contrast with NL DP exhibited, from the very beginning of its interest in titanium, an alert consciousness of the anti-trust laws and moved cautiously and under the guidance of trained anti-trust lawyers. The question is whether it succeeded in avoiding not only the form but also the substance of transgression. I have concluded that it has not; and I arrive at that conclusion by the following analysis of the facts:

DP was manifestly eager to obtain access to NL's patents and skill in the titanium field. NL was equally eager to grant such access. NL's motives for this eagerness are not too important. It matters little whether it sought the reciprocal advantage of DP's patents and re-

search; or whether it feared DP's hostile competition more than it feared its friendly, though competitive, collaboration; or whether it anticipated that NL and DP together would constitute an alliance so formidable as to preclude any other important competition. Whatever its motive, NL was willing; but its liberty of action was sharply circumscribed by the agreement of 1920. That required that, before NL could license DP under its patents, DP must adhere to the principles of the 1920 agreement. Such adherence, DP, refused. The reasons assigned by DP for its refusal were several, and varied from time to time, but always conspicuous among them was the claim that its adherence was forbidden by the anti-trust laws.¹⁰ In this troubled atmosphere, the 1933 agreement was drawn, after long negotiation, by lawyers who were aware of the then recent decision in the Gasoline Cracking case. *Standard Oil Co. v. U. S.*, 1931, 283 U. S. 163.

Carefully, they cast the agreement into the form of a settlement of patent disputes. The disturbing fact about that instrument is that despite the high professional skill expended upon it, its terms are, in important respects, so vague that upon the trial, counsel for NL and counsel for DP did not agree upon its meaning. It is clear, and I believe not disputed, that the 1933 writing is far from the lawyer's ideal of clarity and precision. The only explanation which the record affords for this unexpected obscurity is contained in a letter from Mr. Beschorman to NL's English associates, that the vagueness in the writing is deliberate and the product of fear of the anti-trust laws.

That, of course, does not affirmatively show that the law was violated; moreover, it is true that no evidence is available that DP knew of Beschorman's letter. Conse-

quently, I draw no inference therefrom against DP; but I do draw an inference as to NL's frame of mind in its negotiations with DP.

To return to the negotiation: NL was not at liberty to enter into the 1933 agreement unless and until its foreign associates consented. TG objected. It was particularly concerned lest, as a result of this agreement, TG should find itself in competition, in its own "territory", with DP, the latter armed with TG's own skill, acquired by DP, via NL—a state of affairs which TG regarded as intolerable. To overcome the obstacle of TG's objection, conversations were had between Rupprecht, on behalf of DP, with Beschornian, on behalf of NL, and also between Rupprecht and Jebson; and as a result of these conversations two letters were written, one by DP to NL with the intention that it be transmitted to TG; and the other by NL to TG to accompany DP's letter.

If DP is bound by the second letter, it unquestionably joined the conspiracy then in effect between NL and its foreign associates. The text of the two letters is set out in the margin.¹¹

I believe that DP is bound by the second letter because (1) DP asked NL to persuade TG to consent. Rupprecht told Beschornian,

"that it was a selling job for them [NL] to make I.G. realize that they were putting their interests in National Lead's hands, and that they would be well taken care of"; (Pl. Ex. 268).

(2) Rupprecht was shown the Beschornian letter before it was mailed; and a copy thereof was later sent to him "for your files".¹² There was no repudiation by Rupprecht; or at least, the record shows none; and at this point the

burden of going forward with proof of such repudiation shifted to DP;

Interstate Circuit, Inc. v. U. S., 1939, 306 U. S. 208, 225.

Such quiescence on the part of DP can only be construed as ratification. It follows that the assurance that "Du Pont will loyally respect the territory of T.G." which TG discovered in the communications from Rupprecht and Beschorman was an assurance which must be attributed to DP, despite the painstaking efforts on its part to sever the line of imputation. At least then as to territorial delimitations of the titanium pigment business, DP joined the combination.¹³

U. S. v. Masonite Corp., 1942, 316 U. S. 265.

It may well be, and I take it as a fact, that in giving the assurance not to manufacture in or sell in TG's territory, DP was not making a promise; it was doing no more than giving expression to its then existing business policy not to manufacture or sell in Germany and other TG territory; and it may well be that in any event, DP could not successfully compete in Germany. While much has been made of this point, it does not cover the whole issue either factually or legally. Factually it is inadequate, because TG's exclusive territory extended very considerably beyond Germany and included territories where DP might have competed. Legally it is insufficient, because concerted abstinence from commerce is proscribed even where there are valid unilateral reasons for abstaining;¹⁴ and also because DP's assurance, in part, formed the consideration

for the continued abstinence of the European producers from exporting to the United States.

It is idle to speculate as to what might have happened had NL and DP insisted on making their agreement without regard to TG's objections. Presumably, had such an event occurred, TG would have been relieved of its promise not to export to the United States. In a very important way, DP's assurance closed the breach which was in the making in the wall built around the titanium business by NL and its foreign associates. It also removed the last obstacle to the establishment of a commercial collaboration between the Titan group and the Blumenfeld companies. True, Rupprecht did not go as far with Blumenfeld as he did with NL. Not as much was necessary. Indeed, no action on his part was necessary since he sought nothing from Blumenfeld. From the somewhat conflicting testimony as to the nature of Rupprecht's conversations with Blumenfeld, I conclude that Rupprecht made no promise; but that he did explain to Blumenfeld DP's policy with respect to the European market, a policy made unilaterally in many respects, but undoubtedly strengthened and territorially extended as a result of the assurances to NL.

This description of DP's position in 1933 is consistent with subsequent developments. To Jebsen, devotee of the precise covenant, advocate and practitioner of clarity and definition in language and obligation, such vague and Janus-faced language was a source of disquiet and apprehension. But he hoped for the best. He regarded Rupprecht as one who rarely descended from "sound to things". But he appraised DP as an organization that would not repudiate an unwritten obligation. Rupprecht, on the other hand, found the business of practicing one code, and writing another,

rather strenuous and emotionally confusing. No wonder that communication between DP and NL became somewhat difficult; and, at times, NL's and Tinc's representatives left a conference with very different impressions of what had been agreed to from those entertained by Mr. Rupprecht.

The point is made in behalf of DP that there is no evidence that its Executive Committee knew of Rupprecht's commitments. It is true that no direct evidence of such knowledge is in the record, and I need not trouble to decide whether the circumstances warrant an inference of knowledge. There is abundant evidence that Rupprecht's authority was broad enough to justify charging the corporation with his acts in its behalf.

My general summary of the evidence on this issue is that DP was a member of the combination—true, a special member, with a status, rights and obligations, different from that of the other members, but a member nonetheless.

At this point, DP advances the argument that it had no choice but to do business with the cartel, unless it was content to stay out of the titanium field. To put it in the words of DP's counsel,

"We respectfully submit in conclusion that it cannot be the law of the United States that it is the function of the Courts themselves to impose that form of restraint of competition which must result from a ruling that whenever a European company has a monopoly in its own country (and practically all of them do), and then has a relation in the nature of a common enterprise with some American company, it becomes the duty of all other American companies to renounce and forego access to the inventions and developments controlled by those foreign companies, and to leave them as the exclusive

"property of its American competitor, the partner of those foreign companies".

Perhaps, the answer is that DP, having discovered the conspiracy, should have asked the Attorney General to break it up. Confessedly, the chances of DP getting NL's patents and know-how after such a hostile act would be, to say the least, dubious. But in any event the courts may not validate unlawful conduct because in a particular instance there may be social losses involved in enforcing the law. The paradox which DP discovers, even if it were a genuine one, would be of interest to Congress, not to the courts. But the paradox is not genuine. The conflict is a specious one. Judicial intervention to break up a combination in restraint of trade is not in itself a restraint of trade, although for a time the established channels of commerce may be disarranged. To prohibit adherence to conspiratorial trade restraints hampers trade in about the same way that the prohibition against the circulation of counterfeit money hampers it. It may prevent the consummation of a particular transaction but in the long run it frees business from private regimentation and secures it against those who would trammel it.

III. DP's relations to American Producers.

The case also presents the question whether the contract between NL and DP is offensive to the anti-trust laws independently of the relation of that contract and the parties hereto to the foreign producers.

There are two competing producers who, at the time their agreement is made, between them control 100% of the commerce in titanium products in the United States.

They agree not only to settle their conflicting patent claims—which presumably they may do under the Gasoline Cracking case—but they agree to exchange all future patents, patent applications and know-how. Though these exchanges are not on an exclusive basis, is it not clear, however, that the capacity of such a combination to dominate the market is vastly increased, that the capacity for the exclusion of outsiders from the industry is multiplied? In other words, was not Mr. Ewing, DP's London manager, (whose disavowal of authority to make the following statement I accept) saying no more than the obvious when he wrote in 1933, concerning the NL-DP agreement:

“We look upon this patent pool as a definite advance in cooperation and the strengthening of both parties' position to the exclusion of outsiders”?

I think so.

When the effect of an arrangement is obvious it is fair inference that the parties intended that effect. The accumulation of great power to restrain trade may in itself be an evil;

U. S. v. American Tobacco Co., 1911, 221 U. S.
106, 175.

When the power thus acquired is exerted to accomplish unreasonable restraints of trade, it is surely an evil. A pertinent question is, therefore, how did NL and DP exercise the great power they acquired.¹⁵

NL licensed one American producer, American Zirconium, and on conditions which required submission to the illegal 1920 contract. It never did license Virginia Chemical; and the evidence is rather persuasive that it did not achieve agreement on royalties and could not get from Virginia Chemical written adherence to the 1920 agreement

and that Virginia Chemical was not sufficiently well known to the Europeans to warrant acceptance of its oral assurance.

DP licensed both American Zirconium and Virginia Chemical. In both instances the licenses were subject to a severe tonnage limitation on the product made under the license and to a royalty on all titanium dioxide produced, whether under the licensed patents or not. DP makes much of the fact that the evidence shows that it never refused a license. It is also true, however, that until 1944, DP did refuse licenses unencumbered by tonnage limitations.

Another inevitable consequence of the NL-DP agreement has been the proliferation of patents. The chief spur to private resistance to the grant of patent monopolies has been withdrawn from the parties who, ordinarily would be chiefly concerned. It is not without significance that, despite the jaundiced eye with which the courts have been examining and rejecting patents in recent years, not a single one of the hundreds of patents here involved has ever been litigated. The result of that is that the newcomer is confronted by a veritable jungle of patent claims through which only the very powerful and stouthearted would venture, having a regard for the large initial investment which this business requires. These patents, through the agreements in which they are enmeshed and the manner in which they have been used, have, in fact, been forged into instruments of domination of an entire industry. The net effect is that a business, originally founded upon patents which have long since expired, is today less accessible to free enterprise than when it was first launched.

The exchange of know-how between NL and DP was abandoned in 1940 when, as DP says, the industry matured. The exchange of patents and patent applications continues.

The tonnage limitations in the licenses of American Zirconium and Virginia Chemical was eliminated in 1944. The power of concerted action is still there.

I need not consider whether an exchange of patents, present and future, between competitors, is violative of the Sherman Act. I assume that such an exchange standing alone is innocent. But in the context of the present case,

Associated Press v. U. S., June 18, 1945,
U. S.,

this exchange between two corporations, who between them controlled the entire market, becomes an instrument of restraint, available for use and used, to continue the mastery of the market which NL and DP achieved by means of the illegal international agreements.

In order to give effect to the Sherman Act, plaintiff is entitled to a decree which will restore titanium to the system of free competition; the means of preventing such a development must be destroyed and the power to prevent it must be shorn from those who, by combination, have acquired it.

It is, perhaps, not customary to express, in an opinion, the praise which the attorneys who tried this case deserve for the very high order of professional learning which they brought to it. Nothing, however, restrains me from commenting favorably upon the cooperative attitude exhibited by them which resulted in shortening the trial by many months.¹⁶

A decree will be entered for the plaintiff.

Dated: July 5th, 1945.

SIMON H. RIFKIND
U. S. D. J.

1) The following abbreviations will be used to identify the defendants and co-conspirators:

NL	National Lead
Tinc	Titan Company, Inc.
DP	E. I. du Pont de Nemours and Company, Inc.
TP	The Titanium Pigment Company, Inc.
Krebs	Krebs Pigment & Color Corporation
TAS	Titan Co. A/S
IG	Interessengemeinschaft Farbenindustrie Aktiengesellschaft
TG	Titangesellschaft, g.m.b.h.
SIT	Societe Industrielle du Titane
ICI	Imperial Chemical Industries, Ltd.
GW	Goodlass Wall and Lead Industries, Ltd.
ISC	Imperial Smelting Corporation
BTP	British Titan Products, Ltd.
NTP or Laporte	National Titanium Pigments, Ltd.
CIL	Canadian Industries, Ltd.
CTP	Canadian Titanium Pigments, Ltd.
Kokusan or KK	Kokusan Kogyo Kabushiki Kaisha
TK	Titan Kogyo Kabushiki Kaisha
Terres Rares	Societe de Produits Chimiques des Terres Rares
Thann	Fabriques de Produits Chimiques de Thann et de Mulhouse
Montecatini	Societa Anonima Titanium
Aussig	Verein fur Chemische und Metallurgische Produktion Aussig

2) American Zirconium and Virginia Chemical engaged in the production of only pure TiO_2 . Of extended titanium pigments, NL and DP produced 100% of the amount consumed in the American market.

- 3) "Licensed field" was defined to mean "(1) all methods, processes and apparatus in the field of manufacture and use of all titanium compounds, containing two per cent. (2%) or more of the element titanium in a chemically, mechanically or physically combined state, and mixtures thereof, which can be used as pigments, whether or not adapted for other uses, and (2) all such titanium compounds and mixtures which can be used as pigments, whether or not adapted for other uses".
- 4) Virginia Chemical also licensed DP under one of its patents and applications. TiO_2 produced by Virginia Chemical by the process disclosed in this patent and application was expressly exempted from the quantity and royalty provisions.
- 5) The attorney for the United States has suggested the following definition: "A combination of producers of any product joined together to control its production, sale and price, and to obtain a monopoly in any particular industry or commodity".

Words and Phrases (Permanent Edition) contains no definition of the word; neither does the Federal Digest. Bouvier's Law Dictionary defines cartel thus: Agreements between belligerents authorizing certain non-hostile intercourse between one another, which would otherwise be prevented by the state of war..

In Monograph No. 1, of the Subcommittee on War Mobilization of the Committee on Military Affairs, U. S. Senate, 78th Congress, 2d Session (commonly called the Kilgore Committee) the following is presented:

"Cartels have been defined by two of the foremost members and advocates of such bodies. In the words of Sir Alfred Mond, organizer of Imperial Chemical Industries:

'I use the word cartel to include fusion, pooling arrangement quota arrangement and price convention, because a cartel is protean in its form. * * * In an ultra-technical way, a cartel might be defined as a combination of producers for the purpose of **regulating, as a rule, production, and, frequently, prices.** That does not involve giving up the identity of the different firms. It is not usually made for a period lasting more than a limited time. It does not necessarily carry with it, though in some cases it does, joint selling agencies. Sometimes, too, it carries with it quotas of production. But all this is, perhaps, too narrow a definition. The Germans have a term *Interessen-gemeinschaft* * * * a union or similiarity of interest. The great German Dye Trust started with what they call *Interessen-gemeinschaft*. When first-formed it was a fairly loose combination to regulate production and prices. It has been substituted since by an absolute and complete fusion and exchange of shares—what we should call a complete amalgamation—which is the final and most complete form of any kind of cartel which can be imagined.'

"In the words of Sir Felix J. C. Pole, chairman of Associated Electrical Industries, Ltd.:

'A cartel or association usually means an association by agreement of companies or sections of companies having common interests. It is designed to prevent extreme or unfair competition and allocate markets, and it may also extend to interchange of knowledge resulting from scientific and technical research, exchange of patent rights, standardization of products, etc. Competition is not eliminated, but it is regulated. Competition in quality, efficiency, and service takes the place of the crude method of price cutting.'

"These quotations both emphasize the central fact that cartel activities are arrangements among business

enterprises engaged in the same type of industry to avoid some or all forms of competition. Cartel activities are designed to maximize the profits of participants by directly or indirectly maintaining prices at the level of greatest net return.

"International cartels are, of course, cartels which include business enterprises domiciled under more than one government and doing business across national frontiers. A cartel of this type may include the major enterprises operating in a given industrial field throughout the world, and may determine trade policies in that field in most, if not all, of the world's principal markets."

- 6) *U. S. v. Sisal Sales Corporation*, 1927, 274 U. S. 268.
- 7) *American Banana Co. v. United Fruit Co.*, 1909, 213 U. S. 347.
- 8) *Shields v. Barrow*, 1854, 17 How. 129; *Minnesota v. Northern Securities Co.*, 1902, 184 U. S. 199; *Garzot v. De Rubio*, 1908, 209 U. S. 283; *U. S. v. Northern Pacific R. Co.*, C.C.A. 8, 1905, 134 Fed. 715; *Cf. United Shoe Machinery Corp. v. U. S.*, 1922, 258 U.S. 451.

Whatever may be the scope of this rule, it has not interfered with the action of the courts in striking down systems deemed violative of the anti-trust laws even though such systems included leases, licenses, and other forms of agreements, and the lessees, licensees, and other parties to the agreements were not before the court.

Paramount Famous Lasky Corp. 1930, 282 U. S. 30; *Interstate Circuit v. U. S.*, 1939, 306 U. S. 208; *Ethyl Gasoline Co. v. U. S.*, 1940, 309 U. S. 436; *U. S. v.*

Univis Lens Co., 1942, 316 U. S. 241; *U. S. v. Hartford-Empire Co.*, April 21, 1945, . . . U. S. . . .

Nor were these all cases like *United Shoe Machinery Corp. v. U. S.*, 1922, 258 U. S. 451, where the enjoined covenants were all for the benefit of the lessor, and the injunction did not adversely affect the lessees.

Paramount Famous Lasky Corp. v. U. S., *supra*; *Interstate Circuit v. U. S.*, *supra*; *Ethyl Gasoline Corp. v. U. S.*, *supra*.

Were the rule advocated by NL allowed to operate in the field of restraints upon the foreign commerce of the United States, it would paralyze the enforcement of the law in all cases where one or more of the parties to the conspiracy was an alien corporation over whom the court could acquire no personal jurisdiction. The courts do not so readily permit a frustration of valid national policy. The flexibility of the decree which the court can frame allows for a great degree of accommodation. An example of that is *J. I. Case Co. v. N. L. R. B.*, 1944, 321 U. S. 332.

- 9) This argument is distinct from the "good intention and noble motive" argument which was rejected in *Thomsen v. Cayser*, 1917, 243 U. S. 66, 85.
- 10) Jebesen, unfamiliar with American laws, would not credit this reason, for he could not understand how NL had undertaken to do that which the DP lawyers claimed was prohibited. But perhaps NL was right after all, since for twenty five years it proceeded unmolested and succeeded, with the aid of the unlawful conspiracy, to build a highly profitable business and to retain a dominant position in the industry.

11) KREBS PIGMENT & COLOR CORPORATION

June 28, 1933.

CONFIDENTIAL

W. C. BESCHORMAN, Vice Pres.,
National Lead Company,
111 Broadway,
New York City, New York.

Dear Mr. Beschorman:

We have considered the various points raised by I. G. in their cable to you with the desire, if possible, to comply with its request.

As you are aware, the Anti-Trust Laws of this country definitely prevent this Corporation from making any commitments respecting the territories of Titangesellschaft and Titan Inc. Further, these several companies are not parties to the Krebs-Titanium Pigment Agreement and so, as to them, we are unable to make any direct commitment. However, since Article II of the Krebs-Titanium Pigment Agreement definitely provides that Krebs is limited both in respect to use and sale to the territories set forth in this Article, we think the result will be eminently satisfactory to your foreign associates. As to controlling the disposition of our products by our customers, we are sure you appreciate the difficulty both from a legal and practical standpoint.

The I. G. request that Krebs grant no sub-licenses or technical aid to others in the territories of the foreign companies, is tantamount to obligating Krebs to grant exclusive licenses. The whole agreement, you will recall, for definite reasons, was placed on a non-exclusive basis. Since all licenses received from Krebs under its foreign patents, are subject to negotiation, we believe there will be no difficulty in working out a solution that will be acceptable to all par-

ties; it may well be that such negotiations will result in exclusive licenses to your foreign associates. Naturally, we shall treat technical information in the same manner as our patents.

The present form of our Agreement is the result of much care and thought on the part of both parties. It embodies, as we see it, a practicable working basis for both companies, as well as for your foreign associates.

Very truly yours,

C. H. RUPPRECHT,
President.

July 12, 1933

I. G. Farbenindustrie
Aktiengesellschaft
Frankfurt (Main)
Gruneburgplatz

Dear Sirs:

Immediately upon receipt of cablegram of June 22nd from Dr. Jebesen, a copy of which is attached, we took the matter up with the Krebs Pigment & Color Corporation, submitting to them a copy of the cable, and take pleasure in handing you a copy of their reply under date of June 28th. Careful reading of the Krebs letter will surely indicate to you the spirit in which they are entering into this contract and their efforts to meet your views. We feel that experience will prove that such will be the case.

In regard to the phrase "non-exclusive license" to which you call our attention as occurring in Article 5, Paragraph 2, we have to refer to the United States Anti-Trust Laws which absolutely forbid the granting of exclusive license between two manufacturers in the United States as such a practice would tend to

create a monopoly. Therefore, the use of this phrase "non-exclusive license" is simply to comply with the United States Laws and in practice the licenses under each others patents will undoubtedly prove to be, to all intents and purposes, exclusive.

Referring subsequently to the points brought out in your letter of June 20th, under A, B, C, D and E, you will note that the Krebs Company consider themselves limited both as to use, manufacture and selling to the territory granted to them by the agreement. While this agreement does not specifically prevent Krebs from exporting into your territory any products not manufactured under the patents of the Titanium Pigment Company and its associated companies, it will be a difficult matter to discriminate between such manufacture and manufacture under their patents and maintain close and good cooperation, and the practical effect will be that Krebs will refrain from such export.

As to exports by clients of the Krebs Company, we note that Krebs will use all their efforts to prevent any export outside of their territory which would cause any trouble to you in any way.

In regard to licenses, although non-exclusive licenses are specified throughout the agreement, you will note from the letter of Krebs Company that they are not adverse to granting exclusive licenses in case this may be found desirable by you. Under the practice, as we foresee it, these licenses will be given against a nominal payment except in cases of outstanding development.

We also see your point, that by the exclusive license you have given Titan Co. Inc., which has granted exclusive licenses to the Titanium Pigment Co. Inc., you are not in a position to trade with Krebs regarding any American patents belonging to you. However, you may rest assured that your interest in these

respects, which are also our own interests in view of our part ownership in the Titangesellschaft, will be fully and completely looked after.

At one time we considered the question of an agreement between the Titangesellschaft and Krebs covering the points in your letter, but have dropped this idea as we felt that you would be better served to have us look after your interests than to complicate the situation with a separate contract.

The only other point in your letter which we do not believe has been covered is your suggestion that the contract be changed from termination in three years to termination in five years. Frankly, there is no possibility of the contract being terminated at any time that we can foresee, and I am glad that you did not make any especial point of this either in the cable or in your letter of June 20th.

May I add that we certainly appreciate your attitude and the views you have put forward in your letter to Dr. Jebesen and trust that you will not be disappointed in the future by following the lines we have suggested. May we ask for further advice from you as to whether the Krebs letter and above make the whole matter satisfactory.

Very truly yours,

W. C. BESCHORMAN,
Executive Vice President.

Copy to—Dr. Kuhne
Dr. Jebesen
Mr. Rupprecht
Mr. Tasker, Vice Chairman, British T. P.
Co.

This letter was sent on July 21, 1933.

- 12) The letter was not found in DP's files.
- 13) In view of this finding, I do not reach the question whether doing business with an illegal combination constitutes joining the combination; see *Virtue v. Creamery Package Mfg. Co.*, 1913, 227 U. S. 8; cf. *Direct Sales Co. v. U. S.*, 1943, 319 U. S. 703.
- 14) Compare, *U. S. v. Colgate & Co.*, 1919, 250 U. S. 300; *U. S. v. Schrader's Son, Inc.*, 1920, 252 U. S. 85.
- 15) "In the case at bar, the primary defendants own competing patented processes for manufacturing an unpatented product which is sold in interstate commerce; and agreements concerning such processes are likely to engender the evils to which the Sherman Act was directed." *Standard Oil Co. v. U. S.*, 1931, 283 U. S. 163, 175.
- 16) Over 1400 exhibits were received in evidence.

IN THE
District Court of the United States
FOR THE SOUTHERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA,

Plaintiff,

against

NATIONAL LEAD COMPANY, TITAN COMPANY,
INC., E. I. DU PONT DE NEMOURS AND
COMPANY,

Defendants.

Civil No. -
26-258

**FINDINGS OF FACT AND CONCLUSIONS
OF LAW**

FINDINGS OF FACT

1. This is an action by the United States to prevent and restrain alleged violations of Sections 1 and 2 of the Sherman Antitrust Act, 26 Stat. 209 (1890), 15 U. S. C. §§ 1, 2 (1940). The Court has jurisdiction of the subject matter and of the parties. The defendant National Lead Company (NL) is a New Jersey corporation. The defendants Titan Company, Inc. (Tinc) and E. I. du Pont de Nemours and Company (DP) are Delaware corporations. NL and Tinc have offices and are found and transact business in this District. DP has its office and principal place of business at Wilmington, Delaware, but is found and

transacts business in this District. The business of the defendants and their connection with the activities and violations alleged are described in subsequent findings. The Titanium Pigment Company, Inc. (TP) and Krebs Pigment and Color Corporation (Krebs), both corporations, now dissolved, are co-conspirators but are not made defendants. The following foreign corporations are co-conspirators but are not made defendants:

Titan Co. A/S (TAS)

Interessengemeinschaft Farbenindustrie Aktiengesellschaft (IG)

Titangesellschaft, m.b. H. (TG)

Societe Industrielle du Titane (SIT)

Imperial Chemical Industries, Limited (ICI)

Goodlass Wall and Lead Industries, Limited (GW)

Imperial Smelting Corporation, Limited (ISC)

British Titan Products Company, Limited (BTP)

National Titanium Pigments, Limited (Laporte)

Canadian Industries, Limited (CIL)

Canadian Titanium Pigments, Limited (CTP)

Kokusan Kogyo Kabushiki Kaisha (KK)

Titan Kogyo Kabushiki Kaisha (TK)

Societe de Produits Chimiques des Terres Rares
(Terres Rares)

Fabriques de Produits Chimiques de Thann et de Mulhouse (Thann)

Societa Anonima Titanium (Montecatini)

Verein fur Chemische und Metallurgische Produktion
(Aussig)

2. The defendants DP and NL are engaged in the business of manufacturing, selling and transporting titanium pigments in commerce among the several states of the United States and between the United States and certain foreign nations.

3. The defendant NL has assets in excess of \$100,000,000. It is the largest manufacturer of titanium pigments and compounds in the United States and the largest manufacturer of titanium pigments and compounds in the world, manufacturing and selling 76.5 per cent of composite and 46.4 per cent of pure TiO_2 in the United States in 1943. NL conducted all its activities relating to the manufacture and sale of titanium pigments and compounds through TP until the dissolution of the latter in 1936 and thereafter conducted such operations through its own Titanium Division.

4. The defendant NL owned after December 31, 1927, approximately 87 per cent of the stock of TAS and since January 1944 has owned or controlled approximately 99 per cent of said stock.

5. The defendant NL owned 87 per cent of the stock of Tinc from the date of its incorporation in 1929 to January 28, 1944, at which time it acquired and now owns 100 per cent of said stock.

6. The defendant Tinc since its incorporation in 1929 acquired and now owns the following percentages of voting stock in the following named corporations:

BTP—44%

TG —50%

SIT —57.638%

TK —18.5%

7. The defendant Tinc, in 1929, acquired some of the business assets of TAS and assumed all of the obligations of and was entitled to receive all the benefits of contracts Exhibits A, A-1, A-2, B, B-1, B-3, C, C-3, C-8 and other contracts of TAS.

8. The defendant Tinc, since its incorporation, has owned a number of patents and has held exclusive licenses, with the right to grant sublicenses, under patents pertaining to the manufacture and use of titanium pigments and compounds. A majority of Tinc's officers and directors are and since its organization have been officers and directors of defendant NL.

9. The defendant DP is one of the largest chemical companies in the United States with assets in excess of \$1,000,000,000. The defendant DP is also one of the largest manufacturers of titanium pigments in the United States, manufacturing and selling approximately 23.5 per cent of the composite pigments made in the United States and 45.1 per cent of the pure TiO_2 made in the United States in 1943. It is also the second largest manufacturer of titanium pigments and compounds in the world. The defendant DP entered the titanium pigment business in July, 1931, and until January 1, 1936, conducted all its activities relating to the manufacture and sale of titanium pigments and compounds through Krebs, after which time it conducted its titanium pigment activities through the Krebs Division of DP.

10. Krebs was a Delaware corporation formed in July, 1931, by the defendant DP, the Grasselli Chemical Co., a wholly-owned subsidiary of DP, and the Commercial Solvents Corporation to acquire the business of Commercial Pigments Company (referred to herein as CP), the Krebs Pigment & Chemical Co. and the pigment business of the Grasselli Chemical Co. CP was the only one of the foregoing companies engaged in the manufacture and sale of titanium pigments and compounds prior to the acquisition of its business by Krebs. The defendant DP acquired a 70 per cent stock interest in Krebs at that time and committed itself to engage in the titanium pigment business only through Krebs. The defendant DP acquired the remaining 30 per cent of the stock of Krebs on December 31, 1934. On December 31, 1935, defendant DP acquired all the assets of Krebs and assumed all the obligations of Krebs, thereafter operating the titanium pigment and compound business of said Krebs directly through the Krebs Division of the defendant DP. Krebs continued to operate under the Blumenfeld United States patents and process after it acquired the assets of CP in July, 1931, as has the defendant DP at all times since December 31, 1935. In August, 1933, Krebs acquired by license the right to use all United States patents owned or thereafter acquired by TP or NL which related to the manufacture and use of titanium pigments; and subsequently, as will appear, it acquired by licenses additional United States patent rights from NL's foreign associates. C. H. Rupprecht was a director and president of Krebs from its incorporation until its dissolution and was in charge of the titanium pigment operations of the defendant DP from July, 1931, until his decease September 10, 1944. Krebs also owned a substan-

tial stock interest in Travancore Minerals Company, Ltd., which held rights in extensive ilmenite sand deposits in India. This stock was among the assets of CP acquired by Krebs.

11. TP was a Maine corporation organized in 1916 and was engaged in the manufacture of titanium pigments and compounds from 1920 until its dissolution in 1936. After 1920 the defendant NL acquired stock in said company until December 30, 1932, at which time NL owned all the stock of TP. NL controlled all the activities and policies of TP after 1920 until its dissolution in 1936, at which time all of the assets and liabilities of TP were taken over and its titanium business continued by the defendant NL as a division of NL. TP owned and was the exclusive licensee of many patents relating to the manufacture and use of titanium pigments and compounds, including the Barton-Rossi and Jebsen patents and processes. TP manufactured composite pigments principally; but it also began manufacturing a pure TiO_2 after 1928 in competition with CP.

12. CP was a corporation formed by Commercial Solvents Corporation in 1928. CP acquired the Blumenfeld and other patents in the United States relating to the manufacture and sale of titanium pigments and compounds and from 1928 was engaged in the manufacture of titanium pigments in the United States, operating a plant at Baltimore, Md. It manufactured a pure TiO_2 pigment only and sold it in competition with TP. All its assets were acquired and some of its obligations were assumed by Krebs in July, 1931.

13. TAS was a Norwegian Corporation with its principal place of business at Fredrikstad, Norway, and from

some time prior to 1920 until about 1929 was engaged in the manufacture of titanium pigments and compounds in Norway. Said TAS owned the Jebesen and other patents relating to the manufacture of titanium pigments and compounds and also controlled through A/S Titania large deposits of ilmenite in Norway. It was authorized by TP to use the Barton-Rossi and other patents and processes relating to the manufacture and use of titanium pigments and compounds in 1920. Its activities and policies have been controlled by the defendant NL since 1927. It ceased the manufacture of titanium pigments and compounds in 1929. Thereafter, substantially all titanium pigments and compounds sold by TAS were purchased from TG. TAS continued to function as selling agency for defendant Tinc in part of the territory reserved to Tinc after 1929.

14. IG is a German corporation with its principal place of business in Frankfurt, Germany, and is one of the largest corporations in Germany and one of the largest chemical companies in the world.

15. TG is a German corporation with its principal place of business at Leverkusen, Germany, and was organized in October, 1927, by TAS and IG and in 1939 was the largest producer of titanium pigments and compounds in Europe. TG was licensed to use the Barton-Rossi and Jebesen patents and processes and owns and is licensed to use other patents relating to the manufacture and use of titanium pigments. TG has a right to use some of the DP patents relating to the manufacture and use of titanium pigments and compounds.

16. SIT is a French corporation with its principal place of business at Paris, France. It received a license

from TAS in 1927 to manufacture titanium pigments and compounds in France under the Barton-Rossi and Jepsen patents. No factory was ever erected by the said company to manufacture titanium pigments or compounds in France. In 1927 defendant NL purchased a controlling interest in SIT. SIT has a right to use some of DP's patents relating to the manufacture and use of titanium pigments and compounds.

17. ICI is a corporation organized and existing under the laws of the United Kingdom with its office and principal place of business at London, England, and is the largest manufacturer of chemicals in the British Empire with assets in excess of £100,000,000.

18. GW is a corporation organized under the laws of the United Kingdom with its principal office and place of business in London, England, and is the largest producer of lead and lead pigments in the British Empire.

19. ISC is a corporation organized and existing under the laws of the United Kingdom with its office and principal place of business in London, England, and is one of the largest producers of pigments in the British Empire.

20. BTP is a corporation organized and existing under the laws of the United Kingdom with its office and principal place of business at Billingham, England, and was registered in August, 1930, by ISC with the knowledge and approval of the defendants NL and Tinc. BTP is the largest manufacturer of titanium pigments and compounds in the British Empire. BTP is licensed to use the Barton-Rossi and Jepsen patents and processes and owns and is licensed to use other patents relating to the manufacture of titanium pig-

ments and compounds. BTP also has a right to use some of the DP patents relating to the manufacture and use of titanium pigments and compounds.

21. ICI, GW, and ISC subscribed to and each owns 17 per cent of the stock of BTP. Each acquired said stock on or about the time said BTP commenced active operations in the titanium pigment and compound business in the British Empire in February, 1933.

22. Laporte is a corporation organized and existing under the laws of the United Kingdom with its office and principal place of business at Luton, England, and is the only other producer of titanium pigments and compounds in the British Empire and manufactures titanium pigments and compounds under the Blumenfeld patents and process in England.

23. CIL is a corporation organized and existing under the laws of the Dominion of Canada with its office and principal place of business at Montreal, Canada, and is the largest chemical manufacturer in Canada. Approximately 43 per cent of its stock is and has been owned by the defendant DP since 1928 and approximately 43 per cent of its stock is and has been owned by ICI since 1928.

24. CTP is a corporation organized in January, 1937, and existing under the laws of the Dominion of Canada with its office and principal place of business at Montreal, Canada. Defendant NL has since the incorporation of CTP owned 49 per cent of the voting stock of CTP. The balance of the voting stock is owned by CIL. CTP is the only company engaged in the titanium business in Canada

and owns and/or is licensed to manufacture titanium pigments under the Blumenfeld, Barton-Rossi, Jebson and other patents in Canada. Said CTP is not now manufacturing titanium pigments and compounds in Canada; since 1939 it purchased all of its requirements for sale in the Dominion of Canada from NL and to a slight extent from DP. NL is required to supply the requirements of CTP on a cost plus basis until CTP commences the manufacture of titanium pigments or compounds.

25. KK is a Japanese organization and is the largest manufacturer of paints in Japan and is a subsidiary of Nippon Sangyo, one of the largest industrial enterprises in Japan.

26. TK is a Japanese organization existing under the laws of Japan with its office and principal place of business in Tokyo, Japan. TK was organized in 1936 by Tinc, IG, TG, Terres Rares, and Thann. Since its organization approximately 50 per cent of the stock of TK has been owned by KK, 18½ per cent by Tinc, 16½ per cent by IG, and 15 per cent by Terres Rares and Thann. TK is the largest manufacturer of titanium pigments and compounds in Japan, owns many patents relating to the manufacture and use of titanium pigments and compounds, and is licensed to use the Barton-Rossi, Jebson and Blumenfeld patents and processes in the Japanese Empire. TK also has a right to use some of the DP patents relating to the manufacture and use of titanium pigments and compounds.

27. Terres Rares is a French corporation with its principal place of business at Paris, France; it acquired the Blumenfeld and other patents relating to the manufacture

and use of titanium pigments and compounds in or about the year 1920.

28. Thann is a French corporation with its office and principal place of business at Paris, France, and is the only manufacturer of titanium pigments and compounds in France. It manufactures such pigments and compounds under the Blumenfeld patents and process.

29. Montecatini is an Italian corporation with its office and principal place of business at Milan, Italy, and is a subsidiary of the largest manufacturer of chemicals in Italy. Montecatini is the only manufacturer of titanium pigments and compounds in Italy and is licensed to use the Blumenfeld patents and process.

30. Aussig is a corporation organized under the laws of Czechoslovakia with its office and principal place of business at Prague, Czechoslovakia. It is the largest chemical company in Central Europe and is the only manufacturer of titanium pigments and compounds in Czechoslovakia and is licensed to use the Blumenfeld patents and processes.

31. American Zirconium Corporation (referred to herein as Zirconium) is a subsidiary of the Glidden Co. and sells and ships TiO_2 from its Baltimore, Md., factory into other states in the United States. Zirconium owned certain patents relating to the manufacture of titanium pigments and compounds prior to 1934. It was first licensed to use certain TiO_2 patents by DP on August 19, 1935, by license agreement dated January 1, 1935. Zirconium was licensed by NL to use all of its patents relating to the manufacture of titanium pigments and compounds

on May 6, 1935. The license from the defendant NL to Zirconium was cancelled by agreement (Ex. NL 29) on March 9, 1944. Zirconium manufactures only pure TiO_2 . It produced less than 5 per cent of the aggregate production of TiO_2 produced in the United States between 1935 and 1943.

32. Virginia Chemical Corporation (referred to herein as VC) is a subsidiary of American Cyanamid Company and formerly a subsidiary of Interchemical Company and sells and ships TiO_2 between some of the states of the United States. VC was organized in 1935 to manufacture titanium pigments. It owned certain patents relating to the manufacture and use of titanium pigments and compounds. The defendant DP first licensed VC to use certain of its TiO_2 patents on August 5, 1937. VC produces only pure TiO_2 and produced less than 5 per cent of the aggregate production of TiO_2 in the United States between 1936 and 1943.

33. Titanium pigments and compounds are manufactured from titanium which is the ninth most abundant element on the earth's surface. Titanium is contained in ilmenite and other minerals. Sands and rock formations containing ilmenite are found in India, the United States, Norway, Brazil, and elsewhere throughout the world. Titanium pigments are possessed of great opacity, hiding power and chemical inertness, and are largely displacing other pigments such as lithopone and white lead. Titanium pigments are used in the manufacture of paints and are also used in the manufacture of rubber, glass, paper, vitreous enamels, and many other products. Titanium pigments are sold in the United States and abroad in competition

with other forms of white pigments, notably lithopone and white lead, which are sold in the United States in substantial quantities by a number of commercial concerns other than the defendants and some of which are sold by the defendants.

In and before 1920 there was no substantial trade or commerce in, and no commercial manufacture of, titanium pigments for use in paint, paper, rubber, or other products; pigments used for such purposes were lithopone, white lead, and zinc oxide. The use of metallic titanium in alloys was under development by Titanium Alloy Manufacturing Company at Niagara Falls, N. Y., and chemists engaged in that work (principally Barton and Rossi) were aware of the possibilities of titanium dioxide as a pigment; several important patents on processes and products had been taken out by them, largely for the manufacture of composite titanium pigments; and a subsidiary, TP, had been formed by Titanium Alloy to engage in further research, development, and promotion in the pigment field. Before 1920 tests and demonstrations conducted by TP had attracted the attention of large manufacturers of pigments and paints,—Pittsburgh Plate Glass (paints), New Jersey Zinc (pigments), the defendant DP (pigments and paints), and the defendant NL (pigments),—who investigated TP's processes and products; and this led in 1920 to purchase by NL of 10% of the stock of TP, with an option to purchase up to 50%.

While the research and experimental work described was going on in the United States, Gustav Jebsen, a Norwegian chemist and business man, was making a similar investigation, albeit along different lines, in Norway—this in connection with his search for means of putting to industrial use large deposits of Norwegian ilmenite-bearing ore.

By 1920 Jebsen and his associates had perfected processes patented in Norway, the United States, England, Germany, and in other countries, an important feature of which was disclosure of means for producing relatively pure titanium dioxide pigments by direct application of relatively small quantities of sulphuric acid—a process much less costly than that then developed and in use experimentally at Niagara Falls. Though the Norwegian chemists were aware of the possibilities of composite pigments, they had not perfected processes for the manufacture of such products. In 1920 the process and product patents of Jebsen and his associates were held by TAS, a Norwegian Company.

34. Joseph Blumenfeld, a chemist and managing director of Terres Rares, in or about 1922 obtained patents relating to the manufacture of titanium compounds which he assigned to Terres Rares. Blumenfeld patents issued both in the United States and various foreign countries. While CP was entitled to receive rights under all Blumenfeld titanium pigment inventions patentable in the United States, it was not licensed under and did not own any Blumenfeld patents which issued in foreign countries.

35. The production of titanium pigments in the United States has risen from 100 tons (on the basis of pure TiO_2 content) in 1920 to approximately 110,000 tons in 1943 with a peak production of approximately 128,000 tons in the United States in 1941. The total production of titanium pigments and compounds outside of the United States has shown less growth, the estimated foreign production of titanium pigments and compounds being approximately 1,000 tons in 1920 and approximately 23,000 tons in 1938.

36. Before World War II the leading American manufacturers of titanium pigments, the defendants NL and DP, obtained their supplies of ilmenite from India. Since about August, 1942, however, their supplies have come mainly from a New York deposit owned by NL and operated by NL pursuant to and in accordance with a directive of Office of Production Management approved by the Attorney General of the United States. NL was directed to, and did, offer participation in this project to each of the other producers of titanium pigments in the United States. The offer was accepted by DP. NL invested more than \$10,000,000 in this enterprise.

37. Prior to 1930 the principal producers and sellers of titanium pigments in the world were divided into two groups, the NL group and the Blumenfeld group. The NL group included TP, TAS, SIT, TG, and TINC and were using principally the Barton-Rossi and Jebsen patents and processes for the manufacture of titanium pigments. Each of the companies named had been allocated exclusive marketing territories throughout the world by agreements. The Barton-Rossi patents were and are owned either by TP or NL. The Jebsen patents were and are owned either by TAS or TINC. The patents upon which NL's titanium business was originally founded in 1920 were Barton-Rossi and Jebsen patents. DP and NL were of the opinion that these would expire by the end of 1934. The Blumenfeld group consisted of Terres Rares, Thann, Aussig, Montecatini, and CP to each of which companies Terres Rares had allocated exclusive territories throughout the world. A number of United States titanium pigment patents issued other than the Barton-Rossi and Jebsen patents, including the United States patents covering the Blumenfeld process,

some of which do not expire until 1948 or thereafter. All of the companies engaged in the manufacture of titanium pigments in the United States on a commercial basis use a sulfuric acid process based on the Barton-Rossi, Jebsen, and Blumenfeld patents. The patents relating to titanium pigments and compounds comprise considerably more process claims than product claims. The process claims, with the exception of those of the so-called Rutiox patents which relate to the production of rutile-type titanium pigments, cover for the most part improvements in manufacturing processes originally disclosed in the Barton-Rossi, Jebsen, and Blumenfeld patents, which improvements have led to the improved present-day commercial titanium pigments. The product claims cover practically all such improved titanium pigments; thus, of 23 different grades of titanium pigments (i.e. different products) sold by NL, 21 are covered by unexpired patents. The validity of none of these patents was ever passed upon by any court of record in the United States.

38. The Auer Company developed a process for the manufacture of titanium pigments and compounds in Germany in the early 1920's, was not successful, and ceased manufacturing in 1931. The Auer patents were acquired in November, 1932, by Krebs. They were not of much consequence.

39. TP, on January 1, 1933, owned approximately 67 United States patents and 22 patent applications relating to the manufacture and use of titanium pigments and compounds. It also had the right to use by exclusive license 34 United States patents and 13 patent applications of its foreign associates. TP owned 229 patents in 24 foreign

countries prior to January 1, 1933. TP commercially used only 25 patents and patent applications out of a total of 136 patents and patent applications (18 per cent) which it owned or had the right to use prior to January 1, 1933.

40. NL now owns or controls 75 United States patents and 28 patent applications relating to the manufacture and use of titanium pigments and compounds and has exclusive licenses on 2 TAS, 18 Tinc, 17 IG and 1 TG patents and 4 TG patent applications. It also owns 3 patents in Canada and has non-exclusive licenses on 7 patents in South and Central American countries. NL is also licensed to use 156 DP patents and 30 DP applications and is accordingly entitled to use approximately 269 United States patents and 63 applications. It commercially uses only 66 patents and applications out of a total of approximately 332 which it owns or has the right to use or approximately 20 per cent. There is no evidence that NL obtained patents for the purpose of "blocking" or "fencing".

41. Krebs owned approximately 30 United States patents and 24 applications relating to the manufacture and use of titanium pigments and compounds and owned no foreign patents or applications prior to January 1, 1933. Krebs commercially used a total of 18 such patents and applications or approximately 33 per cent of the total which it had the right to use. DP now owns approximately 174 United States patents and 32 applications. It also owns 48 patents and 14 applications in Canada, 13 patents and 9 applications in England, 20 other patents in 7 other countries including 8 in Japan. It is licensed to use 96 patents and 27 applications of NL or its foreign associates in the United States. It accordingly now owns or has the right to use approxi-

mately 270 United States patents and 59 applications. It uses commercially approximately 70 such patents and applications or about 20 per cent. There is no evidence that Krebs or DP obtained patents for the purpose of "blocking" or "fencing".

42. There are now four producers of titanium pigments in the United States: NL, DP, American Zirconium and VC. As will hereinafter appear, NL and DP have cross licensed each other under their respective patents. Zirconium entered the field in 1935 with licenses from both NL and DP; the NL license was cancelled by agreement in 1944. VC entered the field in 1937 with a license from DP.

43. At no time were there imports of any consequence from abroad. In and after 1922 the tariff applicable to titanium compounds was 30% ad valorem.

44. On July 30, 1920, TP and TAS entered into an agreement, in writing, Ex. A which is uncanceled. This agreement was negotiated on behalf of TP by McCarty, a vice president of NL, now dead, and on behalf of TAS, by Jebsen, who testified at the trial.

The essential features of the agreement are:

(a) The field to which the contract was to apply was defined as including all substances containing above 2% of titanium (unless such substances contained by weight more than 5% of a metal other than titanium in its purely metallic state) and all apparatus, methods, and processes useful in obtaining or manufacturing such substances (except as stated). The intention was to cover processes, substances, and apparatus in the titanium and titanium compound field.

(b) TAS agreed to grant to TP and the latter agreed to accept "a license exclusive of all others including" TAS under all "existing or future" patents of the Norwegian company; but only in or for territories within North America (defined as including the continent of that name, Central America, and Panama); and TP agreed to grant to TAS the correlative rights, but only outside North America, under the existing or future patents of TP. The parties agreed not to sell outside their respective territories, except that reciprocal non-exclusive rights of sale were reserved for South America.

(c) Detailed provision was made for exchange of copies of applications for patents filed by the parties or their other licensees, and for the filing and payment of expenses incidental to the prosecution of such applications and maintenance of patents in territories outside the territory of each; and there was provision for assignment by each company to the other in case either party elected not to prosecute applications or maintain patents outside its territory.

Neither party would ever question or contest the validity of any patent of the other under which it is licensed (within the licensed field).

(d) TAS made TP the exclusive agent of TAS for sales by TAS in North America, such sales to be at prices and on terms determined by the agent, and TP similarly made TAS its sole agent for sales by TP outside North America and South America. (With a view to "the widest possible development of titanium products in the 'Licensed Field'", it was agreed that, notwithstanding the agencies provided for, importations of "finished articles"—that is, paint, paper, rubber, glass, etc.—containing titanium prod-

ucts of the principal, its licensees or sublicensees, would be permitted provided such products did not constitute such an important part of such finished articles that sales within the agent's territory would substantially interfere with the agent's sales of its own titanium products.)

(e) Each party would impart semi-annually to the other full and accurate information in detail as to knowledge obtained in and applicable to the "licensed field"; and would permit the other to inspect and study operations at its plants (exclusive of research laboratories).

(f) The reciprocal grants of exclusive licenses would extend to December 31, 1936, and thereafter for periods of ten years each, with provision for termination by notice to be given at least five years before the end of any such period; and it was agreed that upon such termination each would receive for itself and its licensees within its territory a non-exclusive license under inventions covered by existing patents or applications of the other, but that in other respects the obligations, liabilities, and benefits would cease. (Notice of termination has never been given).

(g) In Article XIV of the 1920 agreement (mentioned by number because of its significance in connection with later agreements) it was provided that each company would have the right, so long as it held an exclusive license from the other under the 1920 agreement, to grant licenses under its own patents and sublicenses under the other's patents on condition, nevertheless, that every such licensee or sublicensee would (i) grant to the party to the 1920 agreement other than its licensor its patent rights in the "licensed field" identical in character, territorial scope, and duration

to those given by its licensor to the other party to the 1920 agreement, (ii) would appoint such other party its sole agent as specified above in respect of its licensor, and (iii) would impart technical information to such other party in the same manner and to the same extent as its licensor. The obligations of TP under this contract were assumed by NL in 1936. The obligations of TAS under this contract were assumed by Tinc in 1929.

45. Simultaneously with the execution of the contract Exhibit A, defendant NL entered into a contract with TAS and TP, Exhibit A-1, which has not been cancelled. NL agreed to respect the provisions of contract Exhibit A and to promptly assign to TP all patents, inventions and improvements relating to titanium pigments or compounds which it then used or might thereafter acquire or whichever should be at its disposal throughout the world. In a separate contract, Titanium Alloy, also a stockholder in TP, agreed with TP and TAS to assume the same obligations as NL.

46. Defendant NL and TAS had a three fold purpose in bringing about and entering into the aforementioned agreements of 1920. The first was to promote the more rapid development of the titanium business by securing to each the right immediately to use the processes and products covered by the patents held by the other, together with future developments and technological improvements and "know how", and consequently the licenses received by each company could be fully utilized, and neither would be inclined nor able to withhold information from the other, nor make use of inventions or developments of the other for or in connection with further inventions or developments not

fully shared with the other. The second was to keep these patent rights and technological know-how as the exclusive possession of the contracting parties and their respective sublicensees under Article XIV. The third was to prevent competition between the parties to the agreement and between their respective sublicensees and between each of the parties and the sublicensees of the other. The agreements had their intended effect.

47. Between 1920 and 1927 TAS suffered business and financial difficulties which led in 1927 (when IG was negotiating for the purchase of its stock, then controlled by Norwegian banks) to the purchase by NL of 87% of the stock of TAS (Jebsen retaining 13%). Since 1929 the rights and obligations of TAS under the 1920 agreement have been held by Tinc, a Delaware company in which NL now owns all the stock. The intended purpose of the acquisition of control of TAS by NL was to utilize TAS and the contract of 1920 to further control competition in the manufacture of titanium pigments and compounds in all markets of the world including the United States.

48. This purpose was accomplished. The defendant NL and TAS agreed to have TAS and subsequently defendant Tinc form in each of the important industrial countries of the world, in association with a local corporation or firm which contemplated the manufacture and sale of titanium pigments and compounds or which could contribute to the technical or commercial development or which threatened to be a serious competitor of NL and TAS, a new company in which NL or TAS were to have a part interest. Any new company so formed was to be given certain territory in which it would have the exclusive right

to manufacture and sell titanium pigments and compounds free from any exports into said territory by NL. The new company so organized was to refrain from competing with NL in its territory (the United States and other countries of North America) or in the territory of any other company associated with NL. TAS and subsequently defendant Tinc were to make said contracts providing for the formation of the new companies and NL was to be bound to adhere to all of the territorial restrictions placed on TAS and subsequently defendant Tinc in such contracts by virtue of contract Exhibit A. All the present and future patents belonging to NL or TAS or any of the companies associated with either in the formation of such new companies, as well as those of the new companies to be organized, were to be licensed exclusively to NL for North America and to the new companies to be organized for their respective exclusive territories and to TAS and subsequently defendant Tinc for the rest of the world.

49. On or about March 3, 1927, TAS entered into a written contract, Ex. B, under which TAS allocated France and its territories, except those appurtenant to the territories of North and South America, to SIT as its exclusive territory in which to engage in the titanium pigment business. SIT assumed all the obligations imposed upon TAS by Exhibit A for the territory allocated to SIT and was entitled to receive all of the benefits for this territory to which TAS was entitled by Exhibit A. This contract Exhibit B is still uncanceled and by its terms is not to be terminated before 1951. (TAS owned about 20% of the French company; NL acquired an additional 58%, which in 1929 was transferred to Tinc; the remainder was held in France by members of the public.)

50. The hope that the French company would use its license from the Norwegian company to manufacture in France, and thus contribute to the fund of processes and technical information available to TAS and TP, was not realized; SIT served merely as a local selling agency for titanium pigments produced elsewhere.

51. Prior to 1927, NL regarded IG as either a potentially invincible competitor or the most powerful ally. NL and TAS entered into negotiations with IG in 1927 and in or about October, 1927, nine separate contracts were entered into (Exs. C to C-8, inclusive). TAS entered into a contract with IG to create TG. IG agreed to engage in the titanium pigment business only through TG and TAS agreed not to engage in the titanium pigment business in the territory allocated to TG except through TG.

In a series of ancillary agreements IG undertook (i) to provide a factory site and building near its Leverkusen works (rent at 6% of the value of the building); (ii) to furnish steam, gas, water, and electricity (at cost), (iii) to supply transportation facilities (at reasonable prices), and (iv) to deliver raw materials (at cost plus 10%, but not more than the competition charged, with provision for "most-favored" customer treatment). IG was appointed agent of TG for sales in the territory allocated to TG. TG agreed to satisfy its ore requirements by purchases from TAS at cost plus 30-50%.

TG was to confine its manufacturing and selling operations to the exclusive territory allocated to it by TAS, to wit, Germany, Russia, Austria, Hungary, Czechoslovakia, Switzerland, Rumania, Serbia, Croatia, Slovenia, Bulgaria, Greece, Turkey, Japan, China and Spain. TAS was granted the rest of the world as its territory.

TG agreed to grant exclusive licenses to TG on all patents it then owned or thereafter acquired, methods and experience relating in any way to the manufacture or use of titanium pigments or compounds, as defined within the limits of the licensed field in said contract (Ex. C-2). "Licensed field" was defined as "all methods and processes in the field of manufacture of titanium compounds containing two per cent (2%) or more of the element titanium as well as the titanium compounds themselves". TAS was given the right to acquire such titanium pigments and compounds as it desired for sale in its territory from TG at cost. Such pigments or compounds so purchased by TAS could only be sold outside TG's territory. TAS granted an exclusive license to TG of all its then owned or thereafter acquired patents, methods and experience relating in any way to the manufacture or use of titanium pigments or compounds, as defined within the limits of the licensed field in said contract, for use in the territory assigned to TG. TG granted to TAS for its territory (the rest of the world exclusive of the territory allocated to TG) an exclusive license of its then owned or thereafter acquired patents, methods and experiences relating in any way to the manufacture or use of titanium pigments or compounds as defined within the limits of the licensed field in said contract.

Both TG and TAS agreed not to export titanium pigments into the territory of the other party without its consent and to impose the same obligations upon their customers.

TG and TAS each agreed not to import into the territory of the other party finished articles (e.g. paint, rubber, glass) manufactured by it; but to permit the importation of finished articles by customers purchasing titanium pig-

ments or compounds from it, subject to the limitations on imports of finished articles into North and South America under the agreement of 1920, Ex. A.

Both TAS and TG were allowed to grant to others licenses of their own or licensed patents provided the licensee or sub-licensee agreed to grant to the other party to the contract an exclusive license under all such licensee's or sublicensee's present and future patents relating to the manufacture and sale of titanium pigments or compounds for the territory of such other party (TAS or TG) and to exchange all technological experience and information and provided further that such licensee or sublicensee agreed to respect the exclusive territory of such other party and to assume the same obligations imposed by contract Exhibit C-3 on both TAS and TG with respect to imports and sales into each other's territory.

These arrangements were to run until 1957 and are automatically renewable for 10-year periods thereafter. They have not been cancelled by the parties.

After the execution of the contract Exhibit C, TG erected a factory for the manufacture of titanium pigments at Leverkusen, Germany, and the business was conducted in accordance with the provisions of these contracts (Exs. C to C-7, inclusive).

52. Prior to 1933, NL and Tinc believed that ICI and GW were planning to engage in the manufacture of titanium pigments and compounds in Great Britain, and ICI had begun development work preparatory to engaging in the manufacture and sale of titanium pigments and compounds. NL and Tinc were apprehensive of their competition, especially as ICI was a very powerful corporation,

although it had never manufactured pigments. Defendant Tinc was engaged in selling titanium pigments in Great Britain since 1928 to a moderate extent. NL and Tinc entered into negotiations with ICI, GW and ISC to create BTP through which NL, Tinc, ICI, GW, and ISC would jointly engage in the titanium pigment business in the British Empire (exclusive of North America). Defendant Tinc on or about March, 1933, entered into the contracts (Exs. F to F-6, inclusive). Tinc agreed that it would not conduct any operations relating to the manufacture and sale of titanium pigments and compounds within the British Empire as defined in said agreements except through BTP; and ICI, ISC, and GW agreed to conduct any of their operations, relating in any way to the manufacture and sale of titanium pigments and compounds, anywhere through BTP exclusively. Subject to restrictions on transfer, the voting shares of BTP were distributed among Tinc—49% (with the right to allot 5% to R. W. Greef & Co., Ltd., which had been the British sales agent of TAS and, later, Tinc), ICI—17%, ISC—17%, and GW—17%. Tinc received the right to name three of the six directors, but it was stipulated that the chairman must be one of the directors named by the British shareholders. The agreement was for thirty years, with severely limited provisions for retirement. BTP was to confine all its operations relating to the manufacture and sale of titanium pigments and compounds to the British Empire, exclusive of any portions thereof within or appurtenant to North and South America. ICI, ISC, and GW each granted and agreed to grant to BTP an exclusive license, or where it was not entitled to do so, a non-exclusive license, to all its present and future patents, processes and subject matter within

the licensed field, defined to mean "all methods and processes in the field of the manufacture of titanium compounds containing two per cent (2%) or more of the element titanium as well as the titanium compounds themselves" (but limited in case of ICI to titanium oxide and titanium pigments); with the right to grant sublicenses; and each grantor agreed that it would supply BTP with copies of its applications for patents in the "licensed field" and, at the request and expense of BTP, would prosecute similar applications in countries designated by BTP.

It was agreed by Tinc and BTP that they would exchange licenses, patent applications, and technical information, and conduct their operations in and with reference to the British Empire (excluding Canada, Newfoundland, and certain other areas), in accordance with the principles of the 1920 agreement above described.

Tinc granted and agreed to grant BTP an exclusive license for the manufacture and sale of titanium pigments and compounds, in the territory allocated to BTP, under all its then owned or thereafter acquired patents, processes and subject matter within the scope of the licensed field. BTP granted and agreed to grant Tinc for the territory of Tinc (the rest of the world) a similar exclusive license of its present and future patents and subject matter within the scope of the licensed field. Both BTP and Tinc agreed not to export any titanium pigments or compounds into the territory of the other without the latter's consent, and further agreed to impose the same obligation upon their customers. Each party agreed not to import into the territory of the other finished articles manufactured by the former; customers of each and of exclusive licensees and sublicensees were permitted to make such importations pro-

vided the importation of such finished articles did not interfere substantially with the sale of titanium pigments or compounds by the other party in its own territory. Each party was allowed to grant sublicenses within its territory provided that neither party could grant licenses under its own patents or under any patents licensed to it under contract Exhibit F-1 unless the licensee or sublicensee agreed to grant to the other party to the contract (BTP or Tinc) an exclusive license under all the present and future patents of such licensee or sublicensee relating to the manufacture and sale of titanium pigments or compounds for the territory of such other party (Tinc or BTP) and unless the licensor (BTP or Tinc) required the licensee or sublicensee to agree to respect the territory of the other party and to impose upon such licensee or sublicensee all of the obligations imposed upon the other party (BTP or Tinc) with respect to the territory of the other in its contract Exhibit F-1. Tinc transferred to BTP all of its British Empire titanium pigment business pursuant to said contract. The contract Exhibit F-1 is by its term to run until 1963 and is uncanceled. The right of TAS to buy 50% of the TG production at cost (and more at cost plus 10%) having been transferred to Tinc, the latter agreed until such time as BTP commenced to manufacture, and for two years thereafter, to supply BTP's requirements at cost. TG supplied BTP with titanium pigments for its markets until BTP constructed a factory. BTP erected a factory for the manufacture of titanium pigments at Billingham and BTP became the largest manufacturer of titanium pigments in the British Empire. The defendant DP had knowledge of the negotiations between ICI and Tinc which culminated in contracts Exhibits F to F-6, inclusive. Tita-

nium was excluded from the Patents and Process Agreement of 1929 between DP and ICI.

53. In February, March, and April, 1943, there were conversations between representatives of NL and members of the Antitrust Division, Department of Justice, relating to a proposed consent decree. The conversations were suggested by the Division's pending investigation of the titanium pigments industry and antedated the indictment against the defendants herein and Messrs. Rockwell, Garesche, and Jebson of NL, and another, returned in this District June 28, 1943. At a pre-trial conference in this case held October 30, 1944, counsel for NL tendered a form of contract agreed to, but not executed, by NL and the British companies. A copy of the proposed agreement was received in evidence at the trial, NL Ex. 30. The parties are ICI, ISC, GW, Tinc, BTP, and NL, and the proposed agreement provides in substance as follows:

(a) Licenses exchanged by BTP and NL (Tinc) will be non-exclusive and royalty free, with the right to grant non-exclusive sublicenses but only to parties who will license BTP or NL, as the case may be, on a non-exclusive, royalty free basis under the patents and applications of such sublicensees.

(b) The licenses will be without restriction as to production, shipment, sale, or use of titanium compounds; and it is provided that neither the 1933 British agreements nor the 1920 agreement will preclude BTP or NL (or Tinc) from manufacturing, selling, or using in, or from shipping from or to, any place in the world, titanium compounds or any product, finished or unfinished, or from otherwise fully exercising the grants made by them.

(c) It is agreed that the holdings of voting shares in BTP will be rearranged so as to insure that NL (or Tinc), ICI, ISC, and GW will each hold the same number of shares.

(d) The right of NL to name three directors of BTP is cancelled, and NL has agreed to refrain from taking any part in or exercising any influence in respect of deliberations or decisions of BTP concerning any business of BTP within, from, or to the United States.

(e) All restrictions on the disposition by NL of its shares of BTP contained in the 1933 agreements are cancelled, and it is agreed that the Articles of Association will be amended to remove therefrom all such restrictions.

(f) The proposed agreement supersedes, in so far as inconsistent therewith, the 1933 agreements, and to the extent that any provision or provisions of the 1933 agreements are inconsistent therewith they are deemed to be amended.

(g) The license agreement (Ex. F-1) between Tinc and BTP made in March 1933 is cancelled.

(h) The agreement for exchange of licenses under patent rights hereafter acquired may be terminated by BTP and NL at the end of any year by three years previous notice in writing, or by NL by notice given at any time pursuant to order of this Court, or by BTP by notice given at any time pursuant to order of competent authority in Great Britain pursuant to the Defense Regulations 1941 or pursuant to the order of any competent court in Great Britain.

54. Prior to 1936 local Japanese companies were planning to manufacture and sell titanium pigments and com-

pounds in Japan. NL, Tinc, IG, and TG believed that such Japanese companies would engage in exports which would lead to competition in all the markets of the world including the United States. KK had been agent for TAS and subsequently for IG in Japan. Tinc, TG, IG, Terres Rares, Thann, KK and Doitsu as trustee for Tinc, IG, TG, Terres Rares, and Thann entered into agreements (Exs. J to J-4, inclusive, which are uncanceled). KK was to own 50% of a new company, and of the remaining 50% Terres Rares 30% and Tinc 70%. IG was to have an option on one-half of Tinc's shares. TK was the new company created as a result of these contracts for the exclusive purpose of engaging in the titanium pigment business in the Japanese Empire, TK was assigned the Japanese Empire as its territory and the rest of the world was assigned through Doitsu, as trustee, to Tinc, IG and Terres Rares. TK was granted an exclusive license for its territory to manufacture and sell titanium pigments and compounds under all Doitsu's then owned or thereafter acquired patents, processes, and subject matter relating in any way to the manufacture of or use of titanium pigments and compounds, as defined within the limits of the licensed field in said contracts, that is, all methods, processes and apparatus in the field of manufacture of all titanium compounds, containing two per cent (2%) or more of the element titanium in a chemically, mechanically or physically combined state and mixtures thereof, which can be used as pigments, whether or not adapted for other uses and all such titanium compounds and mixtures which can be used as pigments, whether or not adapted for other uses. TK granted Doitsu, as trustee for Tinc, IG, TG and Thann a similar exclusive license of its present and future titanium pigment patents,

processes and subject matter relating in any way to the manufacture or use of titanium pigments or compounds, as defined within the limits of the licensed field in said contract. TK and Doitsu each agreed not to import titanium pigments and compounds into the territory of the other without the consent of the other and agreed to impose the same obligations upon its customers. TK and Doitsu agreed not to import into the territory of the other finished articles manufactured by it; and agreed to prevent such importation by customers purchasing titanium pigments or compounds from it if the importation of such finished articles interfered with the sales of titanium pigments by the other party in its own territory. TK was prohibited from granting sublicenses. Doitsu was permitted to grant sublicenses under any patents licensed to it by TK provided the sublicensee of Doitsu agreed to grant to TK for its territory an exclusive license under all present and future patents of the licensee or sublicensee relating to the manufacture and sale of titanium pigments and compounds, and provided Doitsu required the licensee or sublicensee to agree to respect the exclusive territory of TK and to assume the same obligations with respect to TK's territory as were imposed on Doitsu. TK was given an option on Blumenfeld's Japanese patents in exchange for certain rights to be given Terres Rares and Thann. The contract Exhibit J-1 is to run until 1960 and has not been cancelled by the parties. TG supplied the Japanese market with titanium pigments until the Japanese factory commenced production.

55. Contract Exhibit A allocated the Canadian and North American markets to NL as part of its exclusive territory.

56. NL owned certain Canadian patents and, by virtue of the 1920 agreement, had an exclusive license and the right to grant sublicenses under TAS's Canadian patents. Prior to the year 1934 Laporte was interested in erecting a factory in Canada to manufacture titanium pigments. NL and DP were selling titanium pigments and compounds in the Canadian market at this time. DP had contractual relations with CIL conferring certain rights and imposing certain obligations upon CIL with respect to patents and processes. NL and CIL entered upon negotiations which resulted in the making of four contracts (Pl. Exs. K to K-3, inclusive, which are uncanceled). DP and ICI had knowledge of such negotiations. There is no direct evidence that DP either approved or disapproved these contracts. I infer that it acquiesced in them.

(a) There was an agreement between CIL and NL dated January 1, 1937, under which a new company, CTP was granted the sole right to manufacture and sell under CIL's and NL's titanium patents in Canada and Newfoundland. CTP was to be owned 49% by NL and 51% by CIL. In addition, NL was to receive 8000 shares of non-voting (except under certain conditions) \$100 par value stock in consideration of its existing good will, patents and technical information. NL and CIL agreed to subscribe to bonds of CTP for the purpose of erecting a factory; but because of World War II the bonds have not been issued and the factory has not been built. CTP was to have six directors, three nominated by NL and three by CIL; one of the CIL directors was to be president. Until the factory was built NL agreed to supply CTP at cost plus 10% and to use its best efforts to enable CTP to purchase from BTP at cost plus 10%. The agreement was to remain in force for thirty

years, and thereafter could be terminated on twelve months' notice by either party. If at the end of thirty years either party wished to withdraw from the agreement, it was required to offer its shares to the other party at book value. (In determining book value good will, patents, and future earnings were not to be considered.) CTP was to confine its activities relating to the manufacture and sale of titanium pigments and compounds to Canada as its exclusive territory. NL agreed to conduct all of its operations relating to the manufacture and sale of titanium pigments and compounds in Canada through CTP and CIL agreed that it would not conduct any such operations anywhere in the world except through CTP.

(b) CIL agreed to grant an exclusive license, throughout the world, to CTP under all its then owned or thereafter acquired patents, processes and subject matter, relating to the manufacture or use of titanium pigments or compounds.

(c) NL agreed to transfer its Canadian titanium pigment business to CTP.

(d) NL entered into contract Exhibit K-1 with CTP and granted to CTP, for Canada, an exclusive license on all of NL's patents, then owned or thereafter acquired, processes and subject matter relating to the manufacture or use of titanium pigments or compounds. NL was allocated the rest of the world as its territory. CTP granted to NL an exclusive license for the world outside of Canada, in respect of then owned or thereafter acquired patents, processes and subject matter relating to the manufacture, sale and use of titanium pigments, provided that NL was to grant to DP a non-exclusive license for North and South America under

any such patents licensed to NL by CTP. NL and CTP agreed not to export titanium pigments or compounds into the territory of the other without the consent of the other party and agreed to impose the same obligation upon its customers. NL agreed not to export into CTP's territory any finished articles manufactured by NL, and CTP made the correlated agreement. No such restriction was put upon their customers. CTP could grant sublicenses but neither party could grant licenses under its own patents or under any patents licensed to it under Exhibit K-1, (except NL to DP) unless the licensee agreed to grant to the other party to the contract (NL or CTP) an exclusive license under all its present and future patents relating to the manufacture or use of titanium pigments or compounds for the territory of such other party (CTP or NL) and unless such licensor (CTP or NL) compelled the licensee or sublicensee to agree to respect the territory allocated to the parties to the contract (CTP or NL) in Exhibit K-1 with respect to each other's territory. The contract is to run until 1967.

57. In 1935 NL agreed with CIL, BTP and Laporte to maintain prices on American titanium pigments sold by NL in Canada, above the prices charged for titanium pigments manufactured by BTP or Laporte and sold by BTP and Laporte in the Canadian market. This facilitated a price agreement between BTP and Laporte for the British Empire market outside of Canada. There is no evidence as to how long this agreement endured.

58. CTP acquired all of the titanium pigment business of Laporte in Canada in 1937 and said Laporte agreed to

refrain from engaging in the titanium pigment business in Canada until 1952.

BTP (with consent of NL), NL and DP severally supplied the Canadian market until 1939. Since 1939 CTP has acquired its products from DP and NL and will continue to do so until it builds a factory. DP sold its titanium pigment products in Canada prior to the creation of CTP to CIL and since the creation of CTP entirely to CTP. Negotiations are in progress among NL, CIL and CTP to revise the Canadian agreements on lines similar to the revised British agreements.

59. The defendants NL and TINC and their foreign associates, SIT, TG, BTP and TK, agreed in 1939 that, should patents relating to the titanium pigment business but outside the license field be offered by one of the parties to the other, the offer would be subject to the terms and conditions defined in the various contracts under the license field. NL and CTP agreed to extend their obligations to exchange patents, present and future, which in any way related to the titanium pigment business and to other matters, outside the license field on a reciprocal basis.

60. Each and every patent application of NL and NL's foreign associates SIT, TG, BTP, TK, CTP, which related to the licensed field as defined in the various agreements, was immediately available to each other on an exclusive, royalty-free basis under their respective agreements for the respective territories in which the companies operated throughout the world. The expenses of filing and securing said applications and patents were shared equally by the exclusive licensee in whose territory the application was filed and the patent owner.

61. After the outbreak of the present war in 1939 NL, Tinc, and TG believed that if the United States should be at war with Germany and as a consequence the United States Alien Property Custodian should seize the United States patents owned by TG and the German equivalent of the Alien Property Custodian should seize the German patents owned by Tinc and that if such patents were licensed to outsiders there might be competition in the respective markets allocated to the parties to Agreements A and C. NL, Tinc, IG, and TG in order to prevent such potential competition decided that all of the United States patents owned by TG should be transferred to Tinc and the Tinc patents in the exclusive territory of TG as defined in Exhibit C-3 should be transferred to TG provided that none of the other provisions of the several contracts were to be affected in any way. Thereupon TG assigned to Tinc some of its United States patents and applications and Tinc endeavored to transfer all of its German patents and other patents in TG's territory to TG.

62. Defendants NL and Tinc and their foreign associates TG, BTP and TK exchanged complete technical information which in any way related to the manufacture or use of titanium pigments or compounds as defined within the limits of the licensed field in their various agreements. Such information was of inestimable value in developing the business of these associated companies to the exclusion of potential newcomers in competition in the industry.

63. The defendants NL and Tinc and their foreign associates TG, BTP and SIT exchanged full and complete information relating to the sales prices of titanium pig-

ments and the activities of any other companies and potential competitors engaged in the titanium business in any of the markets of the world. Prices for the various markets in Europe were frequently fixed for all titanium pigments below which none of these associated companies was to sell in its respective markets without immediate notice to Tinc.

64. Each and all of the various contracts (Exs. A to A-2 inclusive, B, C to C-8, inclusive, F to F-6, inclusive, J to J-4, inclusive, and K to K-4, inclusive) has had the intended effect of (1) preventing competition among the various parties to said contracts within the exclusive territories allocated to the parties in their respective contracts; (2) creating a world-wide patent pool of many of the patents of commercial value relating to the manufacture of titanium pigments and compounds within the licensed field, as defined in said agreements in which said patents are made available only to the parties to said contracts; (3) creating a world-wide pool of useful technical information, relating to the manufacture and use of titanium pigments, available only to any of the parties to said contracts within their respective exclusive territories; (4) enabling the parties to said contracts outside the United States to facilitate the control of production and prices of all titanium pigments and compounds produced within their respective exclusive territories; (5) completely preventing any patent litigation among the parties (there has been no patent litigation in the titanium pigment field anywhere in the world); and (6) accelerating the spread of improvement in the product and processes throughout the world.

It is a fact, but I am unable to find whether or not it has a causal relationship to these contracts, that production

of titanium pigments has increased both in the United States and abroad [NL alone increased production from a nominal 500-1000 tons in 1920 to 76,788 tons, in terms of TiO_2 content, in 1944 and increased its sales so that in 1943 its sales of titanium pigment exceeded sales in the U. S. of lithopone; zinc oxide and white lead by all producers] and that the price has declined from 40¢ a lb. in 1927 to 14½¢ in 1944.

65. Joseph Blumenfeld, a chemist and managing director of Terres Rares, a French company in which he owned stock, in or about 1922 obtained certain patents relating to the manufacture of titanium compounds which he assigned to Terres Rares. Between 1922 and 1933 Terres Rares granted exclusive licenses to Thann, a French company, for France, its colonies, dependencies, protectorates, and mandated territories; to Montecatini, the largest chemical company in Italy, for Italy, and non-exclusive licenses for Belgium, Holland, Switzerland, Spain, Portugal, and South America, subject to rescission on three months' notice; to Aussig, the largest chemical company in Central Europe, for Czechoslovakia, Austria, Hungary, Yugoslavia, Rumania, and, subject to certain obligations, Danzig and Denmark, and non-exclusive licenses for Poland and Russia, and to Laporte for the British Empire. These were the only companies other than TG producing titanium pigments in Europe in 1933. These companies in 1933 were in competition with TG and BTP in the markets allocated to them by contracts Exhibits B, C, F.

66. Jebson, acting for Tinc, either made or approved agreements among the European producers of titanium as follows:

(a) On November 23, 1933, Aussig and TG entered into an agreement, Ex. G, which established a sales quota of approximately 25% for Aussig and 75% for TG in Germany, Czechoslovakia, Poland, Austria, Hungary, Yugoslavia, Rumania, and Russia. Prices were to be fixed by mutual consent, and were not required to be identical, so that each firm could compete with dealers in other pigments (lithopone, zinc oxide, white lead, etc.) as local conditions might permit. Each gave the other the right to use its product patents, royalty-free, and agreed to support the other in protecting these rights, and to refrain from giving any technical information or aid to potential competitors; and the parties contemplated an agreement on process patents and experience. Aussig agreed to buy from TG at preferential prices any requirements of titanium pigments, above Aussig's then production capacity, which Aussig might need to meet its quota. Said contract was in effect from July 1, 1933, and there is no evidence that it has been cancelled and the effect of the war on its operation is undetermined.

(b) In June, 1935, but to take effect as of May 1, 1934, an agreement known as the Contrat a Quatre (Ex. G-1), was made between Thann and Terres Rares, on the one hand, and SIT and Tinc, on the other, which established a quota of 30% for Thann and Terres Rares and 70% for SIT and Tinc in Belgium, Holland, and "various countries" (Esthonia, Latvia, Lithuania, Abyssinia, Liberia, Arabia, Afghanistan, Persia, and Siam) and a 50% quota for each group in France; prices for these territories were to be fixed by mutual consent; product patents of each party were to be made available to the other parties royalty free.

All parties were to refrain from giving any technical information or aid to potential competitors. No new factories were to be built in the countries of the agreement outside France without the mutual consent of all parties. This agreement could be terminated by a change of sales possibilities resulting from governmental measures, from "new competition", or from "any governmental or legislative measures making it partly or wholly illegal". Otherwise it could not be terminated before December 31, 1938, and then only on six months' notice. There is no evidence that such notice was ever given. Thereafter it was to continue for two-year periods unless notice was given six months before the expiration of any such period. This agreement was related to the Contrat a Six (see below) and could be terminated on three month's notice if that agreement was terminated. There is no evidence that Contrat a Quatre was ever cancelled.

(c) At the same time, in June, 1935, an agreement known as the Contrat de Livraisons (agreement concerning mutual deliveries) was made between the same parties and provided that each group would supply the other with any titanium pigments which it might have available after its own needs were satisfied, at certain fixed prices and on certain terms. It was agreed that goods delivered by one group to the other could not be reexported and that this obligation must be imposed on the customers of the parties.

(d) An agreement known as the Contrat a Six, Ex. G-3, was also entered into at this time by Thann, Terres Rares, Montecatini, Tinc, SIT, and TG, in which territories were allocated and sales allotted on a quota basis, retroactive to May 1, 1934, thus: TG and Aussig were recog-

nized as enjoying exclusive rights of sale and delivery in Germany, Danzig, Czechoslovakia, and Russia; TG, Terres Rares, and Thann in Spain, Portugal, Japan, Switzerland, Bulgaria, Greece, Turkey, China, and South America (subject to TP's rights in South America); Terres Rares, Thann, and SIT in France; Terres Rares, Thann, and Tinc in Belgium, Holland, and "various countries" (as defined above); Montecatini in Italy; Tinc in Norway, Sweden, and Finland; and Tinc and Aussig in Denmark. Each party agreed to respect the others' exclusive rights. Each of the parties to contract Exhibit G-3 agreed to assist each other in preventing third parties from entering the titanium pigment business within their respective territories and each of the parties to contract Exhibit G-3 agreed not to reexport titanium pigments or products from the territories from which they had been ordered and delivered. Sales prices were to be fixed by mutual agreement. Use patent rights were exchanged between the parties on a royalty-free basis. Said contract Exhibit G-3 was in effect until December 31, 1938, when it was cancelled by Montecatini. The intention to continue to cooperate was expressed by the parties to contract Exhibit G-3 after its cancellation.

67. BTR entered into a price agreement with Laporte, in 1934, covering the sale of titanium pigments for the British Empire. Said price agreement is still in effect but has no application to the Canadian market from which Laporte withdrew in 1937. In 1941 BTP and Laporte entered into a quota agreement whereby a quota (Pl. Ex. F-8) of the titanium pigment business in the British market was allocated to each of the said parties. This agree-

ment is uncanceled. Laporte is obligated, by agreement with Blumenfeld, to refrain from exporting titanium pigments to any territory outside of the British Empire and has refrained from making such exports outside the British Empire since 1937.

68. Each and all of the said contracts, Exhibits G, G-1, G-2, G-3, F-8, has and have had the intended effect of helping Tinc and NL to prevent any exports of titanium pigments or compounds to the United States.

69. Defendants NL and Tinc and TG, represented by Jebesen, McCarty and Kuhne, commenced negotiations with CP and the other Blumenfeld companies represented by Blumenfeld, Ticknor, Chase and Burton, to eliminate competition and also to facilitate exchange of technical information and patent rights between the two groups producing titanium pigments in all markets of the world in 1930. The parties believed that no agreement eliminating competition between the two groups in markets outside of the United States and to achieve the other desired ends could be reached unless the parties thereto considered themselves secure against competition from American producers. A tentative understanding had been arrived at between NL's foreign associates and the Blumenfeld interests outside the United States in March, 1931, involving both a technical and commercial cooperation consummation of which required assent of NL in some respects. The negotiators were of the opinion that the making of such an agreement would be facilitated if there were an agreement for technical cooperation between NL and CP. The agreements mentioned in Findings 66 and 67 were essentially for commercial not technical cooperation.

70. By 1931 the titanium pigment art in the United States was already developed. Patent positions were claimed by both NL and CP, the then only existing manufacturers. DP's efforts initiated prior to that time to develop, through research, an independent patent process were still unsuccessful and substantial additional expenditures and time would have been required to complete the program and DP became convinced that if it were to enter the manufacture and sale of titanium pigments as a development of its white pigment business it would be necessary to get into the business as promptly as possible through the acquisition of the patents and the going business of CP.

71. After the purchase of CP by Krebs in July, 1931, defendant NL represented by Jebson, McCarty, Thompson and Beschorman, and Ticknor and Chase, directors of Krebs until the end of 1934 (the latter two without authority from DP), continued negotiations to reach a worldwide agreement which would eliminate competition in the manufacture of titanium pigments and compounds. Blumenfeld continued to represent the Blumenfeld group exclusive of Krebs. The parties to these negotiations continued to seek means whereby the European producers could be secure against competition by DP or Krebs.

72. DP knew of plans to combine all the European titanium producers and was willing to give its aid to NL in bringing about a patent exchange among the European producers in order to secure one in the United States with NL. NL wished to pool with DP all their patents and technical information relating to the manufacture or use of titanium pigments in the United States in order to settle

its patent controversies with DP and to obtain access to DP's patents and technical facilities and jointly to control and dominate the manufacture and sale of titanium pigments and compounds, and DP had knowledge of this wish. NL had threatened but failed to file suit on any claims it may have had for any alleged infringements of patents owned or controlled by it against CP prior to July 1, 1931. The defendant DP knew at the time it acquired the business of CP in July, 1931, that NL had failed to enforce any claim it might have against CP for any alleged infringement of any patents relating to the manufacture and sale of titanium pigments or compounds which were owned and controlled by TP. Both NL and DP in good faith claimed that each infringed certain of the other's titanium pigment patents and both in good faith denied such infringement claiming, among other things, that the patents alleged to be infringed were of doubtful validity. NL and DP agreed in October, 1932, that the validity of the patents claimed to be infringed should not be questioned except as a last resort and that they should try to arrive at a general understanding. NL advised DP of its contracts with TAS in May of 1932 and of the restricted nature of said license agreements. TP did not own the legal title to 7 of the 9 patents it claimed were infringed by Krebs in 1932; but it held licenses thereunder with the right to grant sub-licenses thereunder subject to the contract of 1920. Krebs did not check the legal title to the patents NL alleged it infringed because it considered that under the agreement with NL (Ex. E) it was obtaining rights under all patents involved in the discussions of patent infringement between it and NL. Both TP and Krebs began to

exchange extensively technical information relating to the manufacture and use of titanium pigments in 1932 and the information so exchanged related to much more than any alleged claims of patent infringement by either company. Blumenfeld and his foreign associates furnished technical aid and assistance to Krebs at its instance from August 1931 until the approximate date at which TP and Krebs commenced the exchange of technical information in 1932. Krebs did not unequivocally notify Blumenfeld of its position that it intended to make no agreement with Blumenfeld or Terres Rares for exchange of patents or information until after contract Exhibit E had been approved by NL's foreign associates and executed by TP and Krebs. Krebs never exchanged patent or patent applications with Blumenfeld and did not furnish Blumenfeld with any technical information.

73. In 1933 TP and Krebs were the only producers of titanium pigments in the United States.

Contract Exhibit A by its terms prevented TP from entering into a contract with Krebs unless Krebs subscribed to the provisions of Article 14 of Contract Exhibit A and particularly unless Krebs agreed not to export into the territories of NL's foreign associates and unless Krebs agreed to grant exclusive licenses to NL's foreign associates under all its present and future patents for titanium pigments and compounds in the territories of the foreign associates.

After extensive negotiation NL and DP formulated an agreement in writing later executed on August 28, 1933, and dated as of January 1, 1933, which is in evidence as Exhibit E. The agreement Exhibit E provided:

1. The parties were TP and Krebs.

2. The licensed field was defined as

"(1) All methods, processes and apparatus in the field of manufacture and use of all titanium compounds, containing two per cent (2%) or more of the element titanium in a chemically, mechanically or physically combined state, and mixtures thereof, which can be used as pigments, whether or not adapted for other uses, and (2) all such titanium compounds and mixtures which can be used as pigments, whether or not adapted for other uses".

3. TP granted Krebs (a) a non-exclusive license to use within the United States, its colonies and possessions, and for the licensed field, all processes and apparatus of manufacture, patented or not, which it then used or thereafter used during the term of the agreement, and as to which it was free to grant such license; (b) a non-exclusive license to exploit within the same territory and for the licensed field all U. S. patents then or thereafter owned by it during the term of the agreement; and (c) a non-exclusive license to sell the products resulting from such processes in the U. S., its colonies and possessions, Mexico, Central America, West Indies and South America.

4. Krebs granted the identical rights to TP.

5. Both parties agreed to exchange technical information including patent applications and the aims and results of their research and development work.

6. Each party agreed to help the other obtain a non-exclusive license for the mentioned territory under any U. S. patent under which the other was licensed.

7. Krebs agreed to give TP's foreign associates the first opportunity to acquire from Krebs a non-exclusive license under any patent issued in Europe or Great Britain within the license field, at the disposal of Krebs.

* 8. The contract was subject to cancellation after December 31, 1933, on three years' notice.

9. The parties released each other from claims for infringement of the U. S. patents then owned or thereafter during the term of the agreement acquired with right to sue for past infringement. Each of the parties also released the customers of the other from past infringement claims.

10. Mutual royalties which could not exceed a total of \$40,000 by either party were provided for and no royalties were to be paid by either party after 1936. (And such royalties were paid).

IG objected to this proposed agreement upon the grounds that it failed to provide that Krebs (a) shall not manufacture in TG's territory; (b) shall not sell in TG's territory; (c) shall require its customers not to sell in TG's territory; (d) shall not grant sub-licenses except to enterprises outside TG's territory and for use outside TG's territory; (e) shall not exchange experience except with the same limitations,

"as otherwise the unbearable situation may arise for the T.G. that Krebs competed with T.G. in the latter's territory, with T.G.'s own patent rights and experiences which are transmitted to Krebs through T.P."

In an effort to overcome this obstacle to the making of the agreement of Exhibit E, C. H. Rupprecht, President of Krebs, now deceased, had conversations with W. C. Beschorman, Executive Vice-President of NL.

Rupprecht told Beschorman to make IG realize that they (IG and TG) were putting their interests in NL's hands and that they would be well taken care of; that the anti-trust laws made impossible the incorporation into the agreement of such provisions as IG desired. He also pointed out (a) that the license granted by Exhibit E contained a territorial limitation which excluded TG's territory from the scope of the license; (b) that DP was not then interested in the business of exporting to TG's territory or of manufacturing in TG's territory; (c) that DP had a general policy of not granting licenses which were exclusive as to DP.

In order to assist further in persuading IG to withdraw its objections, Krebs, on June 28, 1933, delivered a letter, drafted by its counsel, to NL for transmittal to IG. In that letter (Pl. Ex. 267)* DP (1) expressed its desire

*
Blind copies to

E. C. Thompson—Cleveland
Wm. Richter —Wil.
T. R. Hanley — “

June 28, 1933

CONFIDENTIAL

W. C. Beschorman, Vice Pres.,
National Lead Company,
111 Broadway,
New York City, New York.

Dear Mr. Beschorman:—

We have considered the various points raised by I. G. in their cable to you with the desire, if possible, to comply with its request.

to comply with IG's request if possible; (2) stated that the antitrust laws prevented DP from making any commitments respecting the territories of TG and Tine; (3) called attention to the territorial limitation in the proposed license agreements and stated that with such limitation, "we think the result will be eminently satisfactory to your foreign associates"; (4) stated that legally and practically there was

As you are aware, the Anti-Trust Laws of this country definitely prevent this Corporation from making any commitments respecting the territories of Titangesellschaft and Titan Inc. Further, these several companies are not parties to the Krebs-Titanium Pigment Agreement and so, as to them, we are unable to make any direct commitment. However, since Article II of the Krebs-Titanium Pigment Agreement definitely provides that Krebs is limited both in respect to use and sale to the territories set forth in this Article, we think the result will be eminently satisfactory to your foreign associates. As to controlling the disposition of our products by our customers, we are sure you appreciate the difficulty both from a legal and practical standpoint.

The I.G. request that Krebs grant no sub-licenses or technical aid to others in the territories of the foreign companies, is tantamount to obligating Krebs to grant exclusive licenses. The whole agreement, you will recall, for definite reasons, was placed on a non-exclusive basis. Since all licenses received by Krebs under its foreign patents, are subject to negotiation, we believe there will be no difficulty in working out a solution that will be acceptable to all parties; it may well be that such negotiations will result in exclusive licenses to your foreign associates. Naturally, we shall treat technical information in the same manner as our patents.

The present form of our Agreement is the result of much care and thought on the part of both parties. It embodies, as we see it, a practicable working basis for both companies, as well as for your foreign associates.

Very truly yours,

President

CHR:s

great difficulty in controlling its customers in the disposition of its products; (5) refused to bind itself not to license others than TG in TG's territory; but expressed the belief that in the prospective negotiations for any foreign patents owned by DP a solution would be worked out which would be "acceptable to all parties; it may well be that such negotiations will result in exclusive licenses to your foreign associates", and that exchange of experience would be treated in the same manner as patents.

On July 21, 1933, after further conversations between Rupprecht and Beschorman and also between Rupprecht and Jebesen, Beschorman sent a letter dated July 12, 1933, transmitting the Krebs letter of June 28th. In his letter of July 12th (Pl. Ex. 273)* Beschorman wrote (1) experience

July 12, 1933.

I. G. Farbenindustrie
Aktiengesellschaft
Frankfurt (Main)
Grüneburgplatz

Dear Sirs:

Immediately upon receipt of cablegram of June 22nd from Dr. Jebesen, copy of which is attached, we took the matter up with the Krebs Pigment & Color Corporation, submitting to them a copy of the cable, and take pleasure in handing you copy of their reply under date of June 28th. Careful reading of the Krebs letter will surely indicate to you the spirit in which they are entering into this contract and their efforts to meet your views. We feel that experience will prove that such will be the case.

In regard to the phrase "non-exclusive license" to which you call our attention as occurring in Article 5, Paragraph 2, we have to refer to the United States Anti-Trust Laws which absolutely forbid the granting of exclusive license between two manufacturers in the United States as such a practice would tend to create a monopoly. Therefore, the use of this phrase "non-exclusive license" is simply to comply with the United States Laws

will prove that Krebs is trying to meet your views; (2) the use of the phrase "non exclusive license" in Article V of

and in practice the licenses under each others patents will undoubtedly prove to be, to all intents and purposes, exclusive.

Referring subsequently to the points brought out in your letter of June 20th, under A, B, C, D and E, you will note that the Krebs Company consider themselves limited both as to use, manufacture and selling to the territory granted to them by the agreement. While this agreement does not specifically prevent Krebs from exporting into your territory any products not manufactured under the patents of the Titanium Pigment Company and its associated companies, it will be a difficult matter to discriminate between such manufacture and manufacture under their patents and maintain close and good co-operation, and the practical effect will be that Krebs will refrain from such export.

As to exports by clients of the Krebs Company, we note that Krebs will use all their efforts to prevent any export outside of their territory which would cause any trouble to you in any way.

In regard to licenses, although non-exclusive licenses are specified throughout the agreement, you will note from the letter of Krebs Company that they are not adverse to granting exclusive licences in case this may be found desirable by you. Under the practice, as we foresee it, these licenses will be given against a nominal payment except in cases of outstanding development.

We also see your point, that by the exclusive license you have given Titan Co. Inc., which has granted exclusive licenses to the Titanium Pigment Co. Inc., you are not in position to trade with Krebs regarding any American patents belonging to you. However, you may rest assured that your interest in these respects, which are also our own interests in view of our part ownership in the Titangesellschaft, will be fully and completely looked after.

At one time we considered the question of an agreement between the Titangesellschaft and Krebs covering the points in your letter, but have dropped this idea as we felt that you would be better served to have us look after your interests than to complicate the situation with a separate contract.

The only other point in your letter which we do not believe has been covered is your suggestion that the contract be changed from termination in three years to termination in five years. Frankly, there is no possibility of the contract being terminated at any time that we can foresee, and I am glad that you did not make any especial point of this either in the cable or in your letter of June 20th.

the Agreement is simply to comply with the anti-trust laws and in practice the licenses will prove to be, to all intents and purposes, exclusive; (3) while the agreement does not specifically prevent Krebs from exporting into TG's territory products not manufactured under TP patents, it will be difficult to discriminate between such manufacture and manufacture under their own patents and maintain close and good cooperation, and the practical effect will be that Krebs will refrain from such export; (4) Krebs will use its efforts to prevent export by its customers; (5) NL will look after your interest in these respects—a method preferable to making a direct contract between Krebs and TG.

A copy of Beschorman's letter of July 12th was, before it was sent to IG, shown to Rupprecht and on July 17, 1933, a copy was sent to him for Krebs' records.

There is no evidence that Rupprecht remonstrated against the sending of Beschorman's letter to IG. Krebs and DP through Rupprecht acquiesced in and ratified the assurance made by Beschorman to IG as to territorial delimitations of the titanium pigment business. In acquiescing in such assurance that DP would not manufacture in or sell in TG's territory, DP was not making a promise; it

May I add that we certainly appreciate your attitude and the views you have put forward in your letter to Dr. Jebsen and trust that you will not be disappointed in the future by following the lines we have suggested. May we ask for further advice from you as to whether the Krebs letter and above make the whole matter satisfactory.

Very truly yours

Executive Vice President.

Copy to—Dr. Kuhne

Dr. Jebsen

Mr. Rupprecht

Mr. Tasker, Vice Chairman, British T.P.Co.

was doing no more than giving expression to its then existing policy not to manufacture or sell in Germany and other TG territory. DP's aforesaid assurance in part formed the consideration for continued abstinence of the European producers from exporting to the United States.

IG construed the communications to mean that Krebs "will loyally respect the territorial delimitations as regards manufacture, granting of licenses and sale, which are fixed in the agreement" between Tinc and TG; and in reliance thereon, withdrew its objections to the agreement Exhibit E. There is no evidence that the aforesaid construction was communicated to DP.

DP did not agree with TP or NL that it would refrain from exporting titanium pigments into TG's territory; but it assured TP and NL that, as a practical matter, such exports would not take place.

DP did not agree with TP or NL that it would grant NL's foreign associates exclusive licenses under DP's foreign patents; but it gave assurances that the practical effect of its conduct would produce substantially identical results as if it did so agree.

Tinc and NL's other foreign associates approved the agreement between TP and Krebs on the basis of the DP assurances.

NL agreed with DP that all of NL's titanium pigment business would be done exclusively through TP, and DP agreed with NL that it would only engage in the titanium pigment business through Krebs. The conduct of DP of its titanium business after January 1, 1936, through the Krebs Division of DP did not breach or violate this agreement or any assurance previously given by DP through Krebs.

DP, through Rupprecht and Krebs, by these assurances and Exhibit E, joined the conspiracy found herein to exist between, NL and its foreign associates. DP's status rights and obligations were different from those of the other members of the combination. DP did not thereafter withdraw.

In July, 1933, Blumenfeld conferred with Rupprecht, President of Krebs, and the former requested Krebs to agree not to export into the territory of the European producers so as to facilitate the making of an agreement for commercial cooperation among the European producers. Rupprecht stated that he would make no such agreement but he explained to Blumenfeld that DP was not interested in the export business.

Neither Krebs nor DP exported any titanium pigments to the territory of TG, BTP, SIT, TK, Terres Rares, Thann, Aussig or Montecatini.

In 1936, DP received an order from BTP for 50 pounds of titanium pigment. Rupprecht telephoned the President of NL and advised that he was sending the requested merchandise as a free sample, "not wanting to have any question raised about * * * selling outside the United States".

74. Blumenfeld's foreign associates, Terres Rares, Aussig, Thann and Montecatini imported no titanium pigments or compounds into the United States.

75. DP and NL exchanged technical information relating in any manner to the manufacturing or use of titanium pigments or compounds from about April, 1932, until April, 1940.

As of about May 1, 1940, the exchange of technical information between NL and DP was discontinued; and the

1933 agreement between TP and Krebs, which had been assumed by NL and DP, respectively, was, by an agreement between NL and DP dated January 1, 1941, (Ex. E-3) amended to eliminate provisions for exchange of technical information.

76. The aforesaid agreement, Ex. E, was further amended to include ~~extender~~ pigments, theretofore included by implication and practice. The agreement, Ex. E, as thus amended has not been terminated.

77. From August, 1933, to January 1, 1941, all patents and patent applications owned or filed by TP, NL, Krebs or DP which in any way related to titanium pigments or compounds within the licensed field of contract Exhibit E, were immediately available to each other on acquisition or filing. From and after January 1, 1941, all United States patent applications of either NL or DP were made available and still are available for the use of the other company after six months from the date of the filing of applications. All United States patents issued to or acquired by either DP or NL within the licensed field from and after January 1, 1941, continued to be and still are available to either company on a royalty-free basis immediately on issue or acquisition.

78. From 1933 on there was active competition between NL and DP for customers. There has been a vast increase in sales; and repeated reductions in the price of titanium pigments have taken place and a very few increases. DP entered the titanium pigment business in 1931 and since that date it has made frequent plant expansions for the manufacture of pure and composite TiO_2 .

and its production increased from 20,027 tons in 1935 to 50,674 tons in 1941 and then decreased to 42,843 tons in 1943.

NL and DP have endeavored to match each other's titanium products; but each also manufactures certain titanium pigments having special applications not manufactured by the other.

There is no allocation of territory or customers between NL and DP; and each maintains a large, highly trained technical sales force engaged in endeavoring to sell titanium pigments. To a very large extent the salesmen of the two companies are chemists whose contact with consumers (that is, manufacturers of paint, rubber, glass, etc.) consists in endeavoring to demonstrate that their products merit acceptance on the basis of technical superiority. The buyers of titanium pigments are mainly well-informed, experienced purchasing agents. NL and DP sell for identical prices; there is no evidence that such price identity is the product of agreement or collusion.

79. In entering into the agreement, Ex. E, NL had several purposes:

- 1) For about a year prior to the making of Ex. E officials of NL had been concerned by the early expiration dates of many of the patents upon which NL relied. By exchanging patents and technology with DP, a large and powerful corporation, possessed of great research facilities, NL expected to strengthen the patent monopoly of NL and DP jointly, as against newcomers, in the titanium pigment business.

- 2) NL intended by its agreement with DP to avoid the expense and the risks of patent litigation and to obtain

access to the Blumenfeld patents and DP's research capacity.

3) NL expected to obtain the benefits of a friendly and cooperative competitor rather than that of a hostile competitor.

4) From the assurances given by DP on the request of IG, NL expected to obtain freedom from interference by DP in the arrangement made with the European producers.

DP's purposes in entering into the agreement Ex. E were:

1) To avoid the expense and risks of patent litigation.

2) To avoid the research expense in trying to avoid infringement of NL valid patents.

3) To obtain access to NL's technical experience and patents in the titanium pigment field as well as the patents and the experience of NL's foreign associates.

4) To strengthen its own patent position in the titanium pigment field to the exclusion of others than NL by pooling its patents with NL.

The necessary effects of the agreement Ex. E. and of DP assurances have been

1) The achievement of NL purposes.

2) The achievement of DP's purposes.

3) To give NL and DP together domination and control over the titanium pigment business in the U. S.

4) To remove obstacles from the execution of the TG-Aussig agreement—Ex. G, the Blumenfeld agreements G-1, G-2, G-3, the Japanese agreement Ex. J, the Canadian agreement Ex. K and the price agreement between BTP and Laporte for the British Empire.

5) A proliferation of patents.

6) To restrict and obstruct exports from the U. S. outside of Western Hemisphere.

7) To restrict and obstruct imports into the U. S.

8) To settle the existing and potential patent disputes and to promote the more rapid development of the titanium business and a greater freedom of action for the parties under titanium pigment patents and developments.

80. In 1934 defendants NL and DP jointly purchased the Leuchs patent relating to the manufacture of titanium pigments each contributing one-half of the cost. Shortly thereafter DP acquired NL's half interest and granted NL a non-exclusive license thereunder royalty free. At time of purchase NL's technical director advised that in his opinion the patent was invalid but he thought it might anticipate a Blumenfeld patent. The patent was reissued with broader claims. Said patent was never used by either DP or NL. The patent was included among those licensed to VC and Zirconium.

81. In 1939 National Lead undertook to adapt a patented machine known as the Micronizer Reduction Mill for use in the manufacture of titanium pigments. Following developments and changes by NL, the machine proved of substantial value as a means of improving the texture of

titanium pigments; and NL secured an exclusive license (Ex. P), with the right to grant sublicenses, for titanium pigments manufacture, from the patentee, International Pulverizing Corporation. NL granted DP pursuant to Ex. E the non-exclusive right to use this apparatus on the same terms and conditions as those granted to NI under its exclusive license from International Pulverizing Corporation. The license from NL to DP was granted at about the same time NL secured an exclusive license from International Pulverizing Corporation to use this apparatus. DP regarded this apparatus essential to enable it to make a pigment comparable to one produced by NL, which was using the apparatus. At its request Zirconium was granted by NL the right to use this apparatus about eighteen months later on the same terms and conditions as DP. NL refused a license of the "Micronizing Apparatus" to VC and Sherwin-Williams Company, who also desired to use this apparatus. In October, 1944, NL relinquished its exclusive license and took a non-exclusive license.

82. DP's method of doing business was to sell titanium pigments to manufacturing consumers. The form of sales contract used by DP contained the phrase "for the buyer's own consumption." The evidence does not establish that this phrase was used pursuant to any agreement with NL, rather than that it was used to express a usual term of a requirements contract.

NL's form of sales contract in 1939, 1940, 1941, and 1942 contained an identical clause.

There is evidence that such a clause is common in the chemical industry and that DP had employed it before the 1933 contract.

83. The only licenses granted by DP of any of its titanium pigment patents were the licenses described herein. No other company or person ever requested such a license from DP.

84. Early in 1934 Zirconium, which was owned by Glidden Company and by Metal and Thermit Corporation in equal shares, began to manufacture titanium dioxide. It owned some patents relating to such manufacture which it had acquired from its parent corporations. On January 8, 1934, DP notified Zirconium that such manufacture might infringe patents owned by DP. Negotiations ensued which resulted in a license agreement from DP to Zirconium dated January 1, 1935, and signed on August 19, 1935, Ex. I. Thereby DP granted Zirconium a non-exclusive license under specified patents, for the life of the patents, subject to the payment of a royalty on *all* TiO_2 produced and subject to a limitation on tonnage of 3,000 tons in 1935, to 9,000 in 1944 and thereafter, of titanium dioxide produced under the license.

On March 7, 1943, DP licensed Zirconium under additional patents without additional royalty. On November 10, 1944, the tonnage limitations were cancelled. DP has collected in royalty from Zirconium \$196,655.86 to July 1, 1944.

On May 17, 1934, NL sent a notice to Zirconium of probable infringement. Negotiations followed which resulted in an agreement dated May 6, 1935, Ex. H, whereby NL in lieu of royalties received 10% of the stock of Zirconium, had its president elected to Zirconium's Board of Directors and NL and Zirconium cross licensed each other under all patents in the titanium pigment field, then owned

or thereafter acquired, and both parties agreed to exchange technical information and experience. Zirconium assumed obligations substantially like those of Article XIV of the 1920 agreement, Ex. A, including restriction on its exports. The agreement was to endure until August 7, 1951.

NL became discontented with the management of Zirconium. Glidden and Zirconium were dissatisfied with NL's refusal to invest more money in the development of Zirconium.

In April, 1944, the agreement was cancelled, the parties exchanged releases and NL assigned its shares of Zirconium to Glidden.

Zirconium produced only pure TiO_2 . From May 6, 1935, to July 1, 1944, its total production was 33,667 tons. NL did render some engineering assistance to Zirconium in connection with the installation and use of its processes and imparted some technical information but frequently it refused to convey such technology to Zirconium on the ground that it was prevented by other agreements from so doing.

In the Spring of 1935 there was a conversation between Rupprecht for DP and Beschorman for NL respecting Zirconium's patents. The evidence does not show what the conversation was.

On occasions before 1940 there was exchange of information between DP and NL relative to Zirconium's production. The evidence does not warrant the inference that the licenses granted by DP to Zirconium and the cross licensing agreement between NL and Zirconium were made pursuant to a common plan of NL and DP or as a result of concerted action by them.

The necessary effect of the two agreements was to restrict the domestic production and foreign exports of Zirconium.

85. VC was organized in 1935 to manufacture titanium pigments in the United States.

On November 19, 1936, DP notified VC of its patent holdings in the titanium field and suggested conference. Negotiations followed and resulted in an agreement, Ex L, executed August 5, 1937.

By this agreement DP granted VC a non exclusive license under a specified list of U. S. patents subject to royalty payment on all production of TiO_2 and subject to limitation on the quantity produced under the license ranging from 3000 tons of TiO_2 content for the year 1937-8 to 9,000 tons for 1946 and any year thereafter. VC granted DP a non exclusive, royalty free license under a named patent.

In November, 1940, DP granted VC a similar license under another patent in this field for an additional royalty.

On July 22, 1943, DP granted VC a similar license under its patents for rutile pigments, without additional royalty.

In November, 1944, DP cancelled the quantity limitations in the licenses.

VC paid DP in royalties to July 1, 1944, \$193,875.24.

VC produced only pure TiO_2 . VC's total tonnage from August 5, 1937 to June 30, 1944, was 36,576 tons.

The necessary effect of this license was to restrict the production of VC.

Early in 1937 NL and VC discussed the possibility of VC infringing NL patents in the titanium field.

Extensive negotiations ensued which did not result in agreement. During these negotiations which extended over several years, VC was willing in 1938 to make an agreement for a reciprocal exchange of licenses and ex-

perience on a royalty free basis. NL desired VC to pay a 2% royalty which VC refused. NL explained its obligations under Art. XIV of the Agreement Ex. A, and was concerned about "the manner of expressing" the obligation of VC not to compete with NL foreign associates, in view of the anti-trust laws.

In a communication to Jebesen on September 13, 1938, NL adverted to this problem and stated that "in this case" a purely verbal understanding was not desirable. Mr. Jebesen replied that the foreign associates would not welcome a verbal understanding, "in the present case".

NL has not instituted any action against VC to enforce its claim of infringement.

There is no evidence that the action of NL and DP with respect to VC was the result of agreement between NL and DP.

86. After the execution of Exhibit E, representatives of DP and NL's foreign associates enjoyed the privilege of visiting each other's titanium pigment plants and obtaining any and all technical information desired by either as regards plant operations and plant equipment from August, 1933, to September, 1938. This exchange was a matter of courtesy and not of agreement; but it was a courtesy DP and NL's foreign associates expected to receive. Similar courtesies were refused to a representative of Aussig.

An exchange of technical information was also agreed upon in principle between DP and NL's foreign associates on June 8, 1938, but not in detail, but this was repudiated by Rupprecht on September 16, 1938. No experience was ever exchanged pursuant thereto. DP continued agreeable to permit plant visits from the representatives of NL's for-

foreign associates, but excluded all research and development information from said exchange arrangement. NL and DP were not exchanging this type of technical information at that time.

The 1933 agreement between TP and Krebs (Ex. E) and the evidence relating thereto does not distinctly disclose what rights and obligations Krebs acquired and assumed with respect to Tinc through TP; specifically, whether Krebs acquired from TP a sublicense to Tinc U. S. patents, and the right to receive Tinc's experience (obtained from TG) conveyed to TP.

Upon the trial NL stated that Krebs obtained by the 1933 agreement sublicenses to all the U. S. patents available to NL, although in 1934 Jebson claimed that this did not include the United States patents of TAS and Tinc. At the trial DP claimed that by virtue of the 1933 agreement Krebs acquired sublicenses to the U. S. patents of TAS and Tinc provided such patents were then "used" by TP.

The language of the 1933 agreement does not contain a restriction of the grants to patents "used".

The labelling of its products by Krebs immediately after the execution of Ex. E indicates the belief of Krebs that it did obtain sublicenses under at least some Tinc U. S. patents.

87. DP's first offer to NL's foreign associates of a license under Article V of Exhibit E covered the "Ti-Tint" patent application filed in the United States by DP in 1934. The royalties asked by DP of NL's foreign associates for its proposed license were unsatisfactory and no patent application covering this invention was ever filed in any foreign country by DP or NL's foreign associates. In 1935 DP filed applications for foreign patents on its Blended Pig-

ments invention, upon which various foreign patents issued. These were the only titanium pigment patents filed by DP in the territory of NL's foreign associates without their specific request for filing. DP granted royalty-free licenses to NL's foreign associates on such patents and applications exclusive except as to DP and ICI. All expenses for maintaining (but not for securing) such patents were paid by NL's foreign associates.

88. The foreign associates of NL desired a general arrangement covering the exchange of patents between DP and themselves in order to eliminate the details of negotiating licenses of specific patents in specific agreements as required by Article Y of Exhibit E. The contract between Blumenfeld, Terres Rares and CP provided for the exchange of future patents and technical information relating to the manufacture and use of titanium pigments between CP, Terres Rares, and its associated companies engaged in the manufacture and sale of titanium pigments outside the United States. Before 1933 Krebs disclaimed any obligation to Terres Rares and Blumenfeld under the CP, Terres Rares, Blumenfeld contract. In 1935, Krebs stated that it did not wish to enter into a general cross-licensing agreement with the foreign associates of NL until it was reasonably certain that it would have no further difficulties with Terres Rares and Blumenfeld under their contract with CP.

89. Negotiations for a general exchange of patents continued between DP and NL's foreign associates in 1938. DP refused to make a written general agreement for the exchange of licenses on present and future patents between

itself and NL's foreign associates because of the United States anti-trust laws. An oral understanding was reached between DP and NL's foreign associates on June 8, 1938, whereby each of said parties agreed to exchange such of its patents and applications as related to the manufacture and use of titanium pigments within the licensed field of Exhibit E with each other as might be desired by each from the other. Such of each other's patents and applications as were desired by DP and NL's foreign associates were to be licensed on a royalty-free basis in separate annual license agreements. Licenses so granted by DP to NL's foreign associates were to be exclusive except as to DP and in England as to ICI. Rupprecht expressed to NL and Tinc the view that the reservation was in fact without practical importance. All licenses granted DP by NL's foreign associates were subject to the approval of NL and were non-exclusive. All expenses for filing and maintaining DP patents in territories of NL's foreign associates were paid for by the foreign associates in whose territory the patent applications were filed.

90. DP acting in accordance with said oral understanding of June, 1938, granted royalty-free licenses to Tinc with the right to sublicense NL's foreign associates on June 20, 1938, April 21, 1939, May 10, 1940, and June 23, 1941 (Pl. Exs. N, Q, R, S, which licenses are uncanceled), and continued to make available to NL's foreign associates on a royalty-free basis all patent applications filed by it in the United States relating to the manufacture and use of titanium pigments until a short time before the transmission of such applications was made dependent on the securing of governmental permission. NL's foreign associates act-

ing in accordance with said oral understanding, of June, 1938, made all of their United States patents and patent applications relating to the manufacture and use of titanium pigments available to DP and via Tinc entered into cross licensing agreements with DP (Pl. Exs. Q, R and S) in 1939, 1940 and 1941. Certain patents and applications obtained under these agreements by DP were of significance to DP's operations. No licenses under the applications of NL's foreign associates were granted to any other producer in the United States, except NL and DP. No licenses under the patents of NL's foreign associates were granted to any producer in the United States, except NL, DP and Zirconium. All of said license agreements were granted with the consent of NL. The licenses granted to NL's foreign associates by DP in Exs. M, N, Q, R and S on any patents issued in the name of DP in the territories of the foreign associates of NL were and are exclusive except for a reservation in favor of DP and ICI. Neither DP nor ICI ever made or attempted to make any use of said patents or applications in the territories of NL's foreign associates. The exchange of DP patent applications with NL's foreign associates has been suspended since 1941 during the present emergency, and "until the present emergency terminates".

91. The filing of DP's foreign applications in the territory of NL's foreign associates is under the complete control of NL's foreign associates and all expenses incurred in filing and maintaining said patents are borne by NL's foreign associates who may abandon said patents or applications licensed to them by DP at will upon notifying DP of its intention to so abandon in which event DP may

elect to maintain the patent on its own account. There is no evidence that DP would have maintained the patent applications and patents abroad if NL's foreign associates had not carried the costs. DP patents issued in the name of DP in the territory of NL's foreign associates were sub-licensed only if the sublicensees agreed not to export from the territory of the foreign associate.

92. No royalties were ever paid by DP to NL or by NL to DP (under the agreement made between NL and its foreign associates in 1937), and neither DP nor NL's foreign associates ever paid any royalties to each other for the use of the patents licensed by them in Exhibits M, N, Q, R, S.

93. The DP-Tinc licensing agreements of 1940 and 1941 did restrict and were intended to restrict the use and export of titanium pigments manufactured under any of said patents by purchasers of said pigments.

94. It is not claimed nor is there evidence that the defendants have controlled the supply of or restrained trade in ilmenite ore used in the commercial manufacture of titanium pigments in the United States.

95. The agreements and understandings entered into between the defendants and the other corporations herein named in Finding 1 have had the following necessary effects:

1. The defendant NL has refrained from competing with the other titanium pigment producers of the world outside of the Western Hemisphere and has not exported any titanium pigments or compounds outside

the Western Hemisphere unless requested so to do by its foreign associates.

2. DP has refrained from exporting titanium pigments or compounds outside the Western Hemisphere and has refrained from competing outside the Western Hemisphere with any of the co-conspirators in their respective exclusive territories.

3. All of the companies engaged in the manufacture of titanium pigments and compounds outside of the United States have refrained from importing such pigments or compounds into the United States and have refrained from competing with the defendants NL and DP in the United States.

4. The defendants NL, DP, and Tinc, have imposed restrictions on resales by purchasers of titanium pigments; but except to the extent found in Finding 93, the evidence does not establish as to DP that such restrictions were the result or effect of its agreements with NL or Tinc.

5. Prices of titanium pigments and compounds in the United States have been maintained at uniform levels and all competition with foreign producers in the manufacture and sale of titanium pigments and compounds in the United States has been eliminated.

6. The defendant DP has restricted the production of titanium pigments by its licensees Zirconium and VC to limit the competition of said licensees. Defendant NL has restricted the market of its licensee Zirconium.

7. The defendants NL and DP control and dominate the manufacture and sale of titanium pigments

and compounds in the United States to the exclusion of all actual or potential competition from any other potential entrant into the titanium pigment business in the United States.

8. The defendants NL and DP secured a monopoly on technical information relating to the manufacture and use of titanium pigments and certain apparatus and equipment necessary to the manufacture of certain titanium pigments to the exclusion and detriment of other producers now engaged in the titanium pigment business in the United States; when NL and DP ceased exchanging technical information, the titanium pigment business was a mature industry.

9. The defendants NL, DP and Tinc have utilized their patents which relate to the manufacture and use of titanium pigments to control and regulate the manufacture and sale of titanium pigments and compounds in the United States; and NL and Tinc with the cooperation of DP have done so throughout the rest of the world.

10. The defendants NL and Tinc, in cooperation with the European producers, have controlled the production of titanium pigments and compounds throughout the rest of the world outside of the United States and refrained from competing with their associated companies in markets allocated to said companies after the outbreak of hostilities in Europe in 1939, serving said allocated markets only at the request of their foreign associates and holding any profits therefrom in the markets so served for the associate to which said exclusive territory was allocated.

11. All of the patents and patent applications of NL's foreign associates in the United States which relate to the manufacture and use of titanium pigments have been and are available to DP on a royalty-free basis and similarly all of DP's patents and applications which relate to the manufacture and use of titanium pigments are available to NL's foreign associates in their respective exclusive territories throughout the rest of the world.

96. The intended effects of the acts of the defendants and the other members of the combination will probably continue to the extent that the post war conditions make possible.

CONCLUSIONS OF LAW

1. Beginning on or about July 30, 1920, NL and co-conspirator TAS and on various dates thereafter Tinc, DP and the others found herein to be co-conspirators continuing at all times thereafter to the date of these findings have been continuously engaged in a combination and conspiracy in restraint of trade and commerce in titanium pigments and compounds among the several states of the United States and with foreign nations and have been and are now parties to contracts, agreements and understandings in restraint of such trade and commerce.

2. Plaintiff is entitled to a decree.

SIMON H. RIFKIND,
U. S. District Judge.

IN THE
District Court of the United States
FOR THE SOUTHERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA,
Plaintiff,
against

NATIONAL LEAD COMPANY, TITAN COM-
PANY, INC., E. I. DU PONT DE NEMOURS
AND COMPANY,

Defendants.

Civil No. 26-258

FINAL DECREE

This cause came on to be heard upon the complaint and the answers thereto upon the evidence and upon argument of counsel. The Court having thereafter rendered and filed its opinion and having made and entered findings of fact and conclusions of law wherein the defendants have been found to have been engaged in a combination in restraint of trade and commerce in titanium pigments among the several states of the United States and of foreign nations, and that the defendants have been and now are parties to contracts, agreements, and understandings in restraint of such trade and commerce in violation of Section 1 of the Sherman Act (26 Stat. 209, 15 U. S. C. § 1);

Now, therefore, upon motion of plaintiff by Wendell Berge, Assistant Attorney General, Herbert Berman and William C. Dixon, Special Assistants to the Attorney General, Julian Caplan and Ephraim Jacobs, Special Attorneys,

and John F. X. McGohey, United States Attorney, for relief in accordance with the prayer of the complaint, and the defendants having severally appeared by counsel, it is ORDERED, ADJUDGED and DECREED as follows:

1. The term "titanium pigments" as used herein shall mean any product containing two percent (2%) or more of the element titanium in a chemically, mechanically or physically combined state and mixtures thereof which can be used as pigments, whether or not adapted for other uses, and also extenders to be used in conjunction with any such product.

2. The term "defendants" shall mean the corporations hereinafter listed who may be identified by the designated abbreviations:

NL	National Lead Company
Tinc	Titan Company, Inc.
DP	E. I. du Pont de Nemours and Company

3. The term "co-conspirators" shall mean the corporations hereinafter listed, who may be identified by the designated abbreviations:

TP	The Titanium Pigment Company, Inc.
Krebs	Krebs Pigment & Color Corporation
TAS	Titan Co. A/S
IG	Interessengemeinschaft Farbenindustrie Aktiengesellschaft
TG	Titangesellschaft m.b.H.
SIT	Société Industrielle du Titane
ICI	Imperial Chemical Industries, Ltd.
GW	Goodlass Wall and Lead Industries, Ltd.
ISC	Imperial Smelting Corporation, Ltd.
BTP	British Titan Products Company, Ltd.

NTP or Laporte	National Titanium Pigments, Ltd.
CIL	Canadian Industries, Ltd.
CTP	Canadian Titanium Pigments, Ltd.
Kokusan or KK	Kokusan Kogyo Kabushiki Kaisha
TK	Titan Kogyo Kabushiki Kaisha
Terres Rares	Société des Produits Chimiques des Terres Rares
Thann	Fabriques des Produits Chimiques de Thann et de Mulhouse
Montecatini	Societa Anonima Titanium
Aussig	Verein fur Chemische und Metallurgische Produktion.

4. The term "patents as herein defined" shall mean United States letters patent and applications as follows: (a) the letters patent and patent applications listed in Appendix A hereof; (b) all divisions, continuations or reissues of any of the foregoing patents and applications; (c) all patents issued upon such applications; (d) all patents which cover any titanium pigments or any process for the manufacture of titanium pigments issued to any of the defendants within five years from the date of this decree; and all such patents which any of the defendants acquires within such five years; and all such patents of which any of the defendants becomes the exclusive licensee within such five years with power to sublicense.

5. The following agreements are hereby adjudged to be unlawful under Section 1 of the Sherman Act and each of them is hereby cancelled and the defendants and each of them and all persons acting or claiming to act through, for or under them and all successors and subsidiaries of any

of the defendants are hereby enjoined and restrained from the further performance of any of the provisions of said agreements and of any agreements amendatory thereof or supplemental thereto:

Agreement dated July 30, 1920, between TP and TAS (Exhibit A);

Agreement between TP and Krebs dated January 1, 1933, as amended January 1, 1941 (Exhibits E and E-3);

Agreements dated July 30, 1920, between NL, TP, The Titanium Alloy Manufacturing Company and TAS (Exhibits A-1 and A-2);

Agreement between TAS and SIT dated March 3, 1927 (Exhibit B);

Agreement between TAS and IG dated October 3 and 20, 1927 (Exhibit C);

Agreement between TAS and IG signed June 24 and October 20, 1927 (Exhibit C-1);

Agreement between TAS and TG signed October 3 and 20, 1927 (Exhibit C-3);

Agreement between TG and TAS dated October 3 and 20, 1927 (Exhibit C-7);

Agreement between TG and TAS dated October 3 and 20, 1927 (Exhibit C-8);

Agreement dated February 16, 1933 between ICI, ISC, GW and TINC (Exhibit F);

Agreements between TINC, SIT, TERRES RARES, and Thann dated June 5 and 17, 1935 (Exhibits G-1 and G-2);

Agreements between TINC, TERRES RARES, and IG, and between TINC, Terres Rares, IG, TG, Thann, and Doitsu both dated January 18, 1936 (Exhibits J and J-2);

Agreement between NL and CIL dated January 1, 1937 (Exhibit K);

Agreement between NL and CTP dated January 1, 1937, as amended February 27, 1939 (Exhibits K-1 and K-5);

Agreements between DP and TINC dated July 27, 1937, June 20, 1938, April 21, 1939, May 10, 1940, and June 23, 1941 (Exhibits M, N, Q, R and S), and the

"License Field Extender" agreements to which NL or TINC were parties, including the agreement between NL and TINC dated March 28, 1939 (Exhibit O);

provided, however, that the provisions of this paragraph with respect to the agreements between TP and Krebs dated January 1, 1933, as amended January 1, 1941 (Exhibits E and E-3) shall not go into effect until the expiration of nine months from the date of this decree.

6. Each of the defendants and each of their directors, officers, agents, employees, successors and subsidiaries and all persons acting, or claiming to act under, through or for them or any of them are hereby enjoined and restrained (a) from entering into, adhering to, maintaining or furthering, directly or indirectly, or claiming any rights under any contract, agreement, understanding, plan or program among themselves, the co-conspirators, or with any other person, partnership or corporation, which has as its pur-

pose or effect the continuing or renewing of any of the agreements listed in paragraph 5 hereof; (b) from entering into, adhering to, maintaining or furthering, directly or indirectly, any contract, agreement, undertaking, plan or program with any other producer or dealer relating to titanium pigments which has as its purpose or effect (1) to divide sales or manufacturing territories, (2) to allocate markets, (3) to limit or prevent United States imports or exports, (4) to grant to any third party any market as its exclusive territory, (5) to keep any third party out of any market; provided, however, that nothing contained in this subdivision (b) of this paragraph 6 shall prohibit any normal and usual arrangements between any defendant and its directors, officers, employees, agents, subsidiaries, or any dealer or distributor, whether or not a co-conspirator; (c) from restricting any purchaser of titanium pigments in the use thereof.

7. Each of the defendants is ordered to grant to any applicant therefor, including any defendant or co-conspirator, a non-exclusive license under any or all of the patents as herein defined at a uniform, reasonable royalty. Such grant may, at the option of the licensor, be conditioned upon the reciprocal grant of a license by the applicant, at a reasonable royalty, under any and all patents covering titanium pigments or their manufacture, now issued or pending, or issued within five years from the date of this decree, if any, owned or controlled by such applicant. Such license or reciprocal license may, at the option of either party, contain a provision for the inspection of the books and records of the licensee by an independent auditor who shall report to the licensor only the amount of royalty due and

payable and no other information. During a period of three years from the date of this decree such license or reciprocal license may at the option of either party contain a provision for the imparting in writing at a reasonable charge, by the licensor to the licensee, of the methods and processes used by the former at the date of the license in its commercial practice under the licensed patents in connection with the production of titanium pigments. The Court reserves jurisdiction to pass upon the reasonableness of any royalty or charge herein directed to be reasonable. Defendants are restrained from attempting to enforce any rights under any foreign patents owned by them or under which they are the exclusive licensees to prevent the exportation of titanium pigments from the United States to any foreign country.

8. Within one year from the date of this decree, defendants NL and Tinc shall present to the Court for its approval a plan for divesting themselves of their stock holdings and other financial interests, direct and indirect, in BTP, CTP, TG and TK, or for the purchase of the entire stock holdings and other financial interests, direct and indirect, in said companies or any of them. Such plan of sale shall not provide for the transfer of such stock or interest to any other defendant or to any corporation in which any defendant will, upon consummation of the plan, have any interest, provided that this provision shall not preclude transfer of said defendants' stock holdings in BTP to ISC, GW, and ICI, or any of them, or preclude transfer of said defendants' stock holdings in CTP to CIL. The plan shall provide for its completion within two years from the date of this decree.

9. Either American Zirconium Corporation or Virginia Chemical Corporation, their successors or assigns, may at

their option, if exercised within six months from the date of this decree, apply for licenses from DP under the provisions of paragraph 7. In the event American Zirconium Corporation, Virginia Chemical Corporation or their respective successors or assigns exercise the foregoing option, DP is enjoined from collecting royalties under any existing license agreement relating to titanium pigments between it and the person exercising the option in respect of any period subsequent to such exercise. Defendants NL, Tinc and DP are hereby enjoined from bringing, or threatening to bring, any action against any person or corporation for the alleged infringement prior to the date of this decree of any patent as herein defined.

10. The Attorney General of the United States or his proper representative shall, for the purpose of securing compliance with this decree, be permitted (1) access, during the office hours of the defendants, to all books, ledgers, accounts, correspondence, memoranda, and other records and documents in the possession or under the control of the defendants, relating to any matters contained in this decree, (2) subject to any legally recognized privilege, without restraint or interference from the defendants, to interview officers or employees of the defendants, who may have counsel present, regarding any such matters; provided, however, that information obtained by the means permitted in this paragraph shall not be divulged by any representative of the Department of Justice to any person other than a duly authorized representative of the Department of Justice except in the course of legal proceedings for the purpose of securing compliance with this decree in which the United States is a party or as otherwise required by law.

11. Judgment is entered against the defendants for all costs to be taxed in this proceeding.

12. The cancellations, injunctions and all executory action provided for under this decree shall not become effective or operative until ninety days from the date of this decree.

13. Jurisdiction of this cause, and of the parties hereto, is retained by the Court for the purpose of enabling any of the parties to this decree, or any other person or corporation that may hereafter become bound, in whole or in part, thereby to apply to the Court at any time for such further orders, modifications, vacations or directions as may be necessary or appropriate

- (1) for the construction or carrying out of this decree, and
- (2) for the enforcement of compliance therewith and the punishment of violations thereof.

Dated at New York,
October 11, 1945.

SIMON H. RIFKIND,
District Judge.

APPENDIX A

I. *National Lead Company:*

A. Patents.

Patent No.	Date of Issue
1,695,270	Dec. 18, 1928
1,697,929	Jan. 8, 1929
1,738,765	Dec. 10, 1929
1,758,472	May 13, 1930
1,773,727	Aug. 26, 1930
1,820,987	Sept. 1, 1931
1,820,988	Sept. 1, 1931
1,831,852	Nov. 17, 1931
1,847,539	Mar. 1, 1932
1,856,565	May 3, 1932
1,889,027	Nov. 29, 1932
1,906,729	May 2, 1933
1,906,730	May 2, 1933
1,916,236	July 4, 1933
1,929,521	Oct. 10, 1933
1,957,528	May 8, 1934
1,969,061	Aug. 7, 1934
2,034,923	Mar. 24, 1936
2,039,432	May 5, 1936
2,055,222	Sept. 22, 1936
2,084,826	June 22, 1937
2,084,917	June 22, 1937
2,084,918	June 22, 1937
2,091,799	Aug. 31, 1937
2,098,278	Nov. 9, 1937
2,113,945	Apr. 12, 1938
2,113,946	Apr. 12, 1938
Re. 21,693	Jan. 14, 1941
2,130,560	Sept. 20, 1938

Patent No.	Date of Issue
2,130,565	Sept. 20, 1938
2,132,491	Oct. 11, 1938
2,133,251	Oct. 11, 1938
2,140,222	Dec. 13, 1938
2,148,283	Feb. 21, 1939
2,154,130	Apr. 11, 1939
2,166,082	July 11, 1939
2,167,626	Aug. 1, 1939
2,167,627	Aug. 1, 1939
2,167,628	Aug. 1, 1939
2,170,800	Aug. 29, 1939
2,170,940	Aug. 29, 1939
2,176,875	Oct. 24, 1939
2,176,876	Oct. 24, 1939
2,176,877	Oct. 24, 1939
2,184,938	Dec. 26, 1939
2,202,594	May 28, 1940
2,211,828	Aug. 20, 1940
2,212,629	Aug. 27, 1940
2,215,857	Sept. 24, 1940
2,215,866	Sept. 24, 1940
2,222,385	Nov. 19, 1940
2,227,239	Dec. 31, 1940
2,234,681	Mar. 11, 1941
2,244,258	June 3, 1941
2,246,062	June 17, 1941
2,278,709	Apr. 7, 1942
2,280,795	Apr. 28, 1942
2,285,485	June 9, 1942
2,285,486	June 9, 1942
2,285,894	June 9, 1942
2,290,539	July 21, 1942
2,291,091	July 28, 1942
2,291,082	July 28, 1942

Patent No.	Date of Issue
2,316,840	Apr. 20, 1943
2,316,841	Apr. 20, 1943
2,329,641	Sept. 14, 1943
2,334,663	Nov. 16, 1943
2,341,994	Feb. 15, 1944
2,344,265	Mar. 14, 1944
2,344,288	Mar. 14, 1944
2,344,319	Mar. 14, 1944
2,346,296	Apr. 11, 1944
2,346,320	Apr. 11, 1944
2,346,188	Apr. 11, 1944
2,346,322	Apr. 11, 1944
2,365,559	Dec. 19, 1944
2,365,560	Dec. 19, 1944
2,367,738	Jan. 9, 1945
2,368,591	Jan. 30, 1945
2,369,468	Feb. 13, 1945
2,378,675	June 19, 1945
2,378,790	June 19, 1945

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Serial No.	Filing Date	Inventor
364,986	Nov. 9, 1940	S. W. Martin
441,990	May 6, 1942	W. Grave et al.
453,300	Aug. 1, 1942	J. L. Turner et al.
454,185	Aug. 8, 1942	H. V. Alessandroni
454,193	Aug. 8, 1942	S. S. Cole et al.
454,194	Aug. 8, 1942	W. Y. Agnew
459,026	Sept. 19, 1942	C. W. Rou et al.
489,576	June 3, 1943	F. L. Kingsbury
500,921	Sept. 2, 1943	W. Y. Agnew
505,082	Oct. 5, 1943	A. P. Honchar
522,845	Feb. 17, 1944	S. G. Tinsley
526,130	Mar. 11, 1944	F. L. Kingsbury et al.
538,549	June 2, 1944	A. P. Honchar

Serial No.	Filing Date	Inventor
539,332	June 8, 1944	J. M. O'Shaughnessy
546,903	July 27, 1944	J. Barksdale
555,902	Sept. 26, 1944	S. S. Cole
572,658	Jan. 13, 1945	J. L. Turner et al.
585,812	Mar. 30, 1945	W. F. Meister
599,129	June 12, 1945	S. S. Cole
605,627	July 17, 1945	R. W. Ancrum

II. Titan Company Inc:

A. Patents.

Patent No.	Date of Issue
2,055,221	Sept. 22, 1936
2,111,460	Mar. 15, 1938
*2,121,215	June 21, 1938
*2,130,554	Sept. 30, 1938
2,139,686	Dec. 13, 1938
2,140,235	Dec. 13, 1938
2,140,236	Dec. 13, 1938
2,161,755	June 6, 1939
2,200,373	May 14, 1940
*2,224,987	Dec. 17, 1940
2,242,320	May 20, 1941
2,246,030	June 17, 1941
*2,260,177	Oct. 21, 1941
*2,303,305	Nov. 24, 1942
*2,303,306	Nov. 24, 1942
*2,303,307	Nov. 24, 1942
*2,339,793	Jan. 25, 1944
2,339,808	Jan. 25, 1944
2,365,135	Dec. 12, 1944

B. Patent Applications.

Serial No.	Filing Date	Inventor
495,946	July 23, 1943	R. W. Ancrum

*Vested in Alien Property Custodian.

III. *Titan Company A/S*: Exclusively licensed to National Lead Co.

A. Patents.

Patent No.	Date of Issue
*1,852,510	Apr. 5, 1932
*1,919,425	July 25, 1933

IV. *I. G. Farbenindustrie*: Exclusively licensed to National Lead Co.

A. Patents.

Patent No.	Date of Issue
*1,813,649	July 7, 1931
1,816,388	July 28, 1931
*1,849,153	Mar. 15, 1932
*1,850,154	Mar. 22, 1932
*1,850,286	Mar. 22, 1932
*1,878,013	Sept. 20, 1932
*1,891,210	Dec. 13, 1932
*1,891,911	Dec. 27, 1932
*1,934,778	Nov. 14, 1933
*1,941,285	Dec. 26, 1933
*1,995,580	Mar. 26, 1935
*2,068,294	Jan. 19, 1937
*2,118,916	May 31, 1938
*2,121,408	June 21, 1938
*2,122,180	June 28, 1938
*2,138,384	Nov. 29, 1938
*2,144,577	Jan. 17, 1939
*2,158,520	May 16, 1939
*2,161,975	June 13, 1939
*2,187,821	Jan. 23, 1940
*2,280,223	Apr. 21, 1942
*2,337,103	Dec. 21, 1943

*Vested in Alien Property Custodian.

V. *Titangesellschaft*: Exclusively licensed to National
* Lead Co.

Patent No.	Date of Issue
*2,275,856	Mar. 10, 1942
*2,367,118	Jan. 9, 1945

VI. *DuPont*:

A. Patents.

Patent No.	Date of Issue
1,707,248	Apr. 2, 1929
1,707,257	Apr. 2, 1929
1,709,999	Apr. 23, 1929
1,750,287	Mar. 11, 1930
Re. 18,790	Apr. 4, 1933
Re. 18,854	May 30, 1933
1,766,592	June 24, 1930
1,797,760	Mar. 24, 1931
1,827,691	Oct. 13, 1931
1,832,666	Nov. 17, 1931
1,836,275	Dec. 15, 1931
1,845,633	Feb. 16, 1932
1,846,188	Feb. 23, 1932
1,851,487	Mar. 29, 1932
Re. 19,594	May 28, 1935
1,864,504	June 21, 1932
1,885,187	Nov. 1, 1932
1,885,921	Nov. 1, 1932
1,885,934	Nov. 1, 1932
1,892,693	Jan. 3, 1933
1,899,572	Feb. 28, 1933
1,899,573	Feb. 28, 1933
1,899,574	Feb. 28, 1933
1,902,203	Mar. 21, 1933

*Vested in Alien Property Custodian.

Patent No.	Date of Issue
1,902,204	Mar. 21, 1933
1,915,393	June 27, 1933
1,922,816	Aug. 15, 1933
1,931,380	Oct. 17, 1933
1,931,381	Oct. 17, 1933
1,937,037	Nov. 28, 1933
1,943,497	Jan. 16, 1934
1,975,339	Oct. 2, 1934
1,977,577	Oct. 16, 1934
1,977,582	Oct. 16, 1934
2,006,342	July 2, 1935
2,018,955	Oct. 29, 1935
2,026,862	Jan. 7, 1936
2,031,750	Feb. 25, 1936
2,044,941	June 23, 1936
2,044,942	June 23, 1936
2,045,836	June 30, 1936
2,046,054	June 30, 1936
2,047,208	July 14, 1936
2,049,504	Aug. 4, 1936
2,062,133	Nov. 24, 1936
2,062,134	Nov. 24, 1936
Re. 21,427	Apr. 16, 1940
2,098,025	Nov. 2, 1937
2,098,026	Nov. 2, 1937
2,098,054	Nov. 2, 1937
2,098,055	Nov. 2, 1937
2,098,056	Nov. 2, 1937
2,111,236	Mar. 15, 1938
2,111,788	Mar. 22, 1938
2,112,966	Apr. 5, 1938
2,113,380	Apr. 5, 1938
2,125,340	Aug. 2, 1938
2,125,342	Aug. 2, 1938

Patent No.	Date of Issue
2,127,247	Aug. 16, 1938
2,136,313	Nov. 8, 1938
2,138,090	Nov. 29, 1938
2,138,118	Nov. 29, 1938
2,149,329	Mar. 7, 1939
2,149,370	Mar. 7, 1939
2,150,235	Mar. 14, 1939
2,150,236	Mar. 14, 1939
2,151,331	Mar. 21, 1939
2,151,339	Mar. 21, 1939
2,159,055	May 23, 1939
2,163,385	June 20, 1939
2,166,221	July 18, 1939
2,166,257	July 18, 1939
2,177,250	Oct. 24, 1939
2,177,254	Oct. 24, 1939
2,177,269	Oct. 24, 1939
2,180,961	Nov. 21, 1939
2,183,365	Dec. 12, 1939
2,187,050	Jan. 16, 1940
2,192,501	Mar. 5, 1940
2,192,687	Mar. 5, 1940
2,192,953	Mar. 12, 1940
2,192,954	Mar. 12, 1940
2,192,956	Mar. 12, 1940
2,193,559	Mar. 12, 1940
2,193,563	Mar. 12, 1940
2,197,953	Apr. 23, 1940
2,212,935	Aug. 27, 1940
2,213,542	Sept. 3, 1940
2,214,132	Sept. 10, 1940
2,214,815	Sept. 17, 1940
2,216,536	Oct. 1, 1940
2,216,879	Oct. 8, 1940

Patent No.	Date of Issue
2,216,889	Oct. 8, 1940
2,218,655	Oct. 22, 1940
2,218,704	Oct. 22, 1940
2,219,129	Oct. 22, 1940
2,220,952	Nov. 12, 1940
2,220,966	Nov. 12, 1940
2,224,777	Dec. 10, 1940
2,226,142	Dec. 24, 1940
2,226,147	Dec. 24, 1940
2,231,455	Feb. 11, 1941
2,231,456	Feb. 11, 1941
2,231,467	Feb. 11, 1941
2,231,468	Feb. 11, 1941
2,232,164	Feb. 18, 1941
2,232,168	Feb. 18, 1941
2,232,723	Feb. 25, 1941
2,233,358	Feb. 25, 1941
2,237,764	Apr. 8, 1941
2,253,551	Aug. 26, 1941
2,253,590	Aug. 26, 1941
2,253,595	Aug. 26, 1941
2,254,630	Sept. 2, 1941
2,257,278	Sept. 30, 1941
2,259,638	Oct. 21, 1941
2,260,826	Oct. 28, 1941
2,260,871	Oct. 28, 1941
2,265,386	Dec. 9, 1941
2,266,233	Dec. 16, 1941
2,266,260	Dec. 16, 1941
2,266,793	Dec. 23, 1941
2,269,139	Jan. 6, 1942
2,273,431	Feb. 17, 1942
2,274,521	Feb. 24, 1942
2,274,541	Feb. 24, 1942

Patent No.	Date of Issue
2,280,590	Apr. 21, 1942
2,280,619	Apr. 21, 1942
2,282,006	May 5, 1942
2,282,303	May 12, 1942
2,282,527	May 12, 1942
2,284,585	May 26, 1942
2,284,772	June 2, 1942
2,286,881	June 16, 1942
2,286,882	June 16, 1942
2,286,910	June 16, 1942
2,287,161	June 23, 1942
2,287,416	June 23, 1942
2,287,440	June 23, 1942
2,293,861	Aug. 25, 1942
2,294,381	Sept. 1, 1942
2,294,394	Sept. 1, 1942
2,296,066	Sept. 15, 1942
2,296,618	Sept. 22, 1942
2,296,636	Sept. 22, 1942
2,296,637	Sept. 22, 1942
2,296,639	Sept. 22, 1942
2,301,412	Nov. 10, 1942
2,304,110	Dec. 8, 1942
2,305,368	Dec. 15, 1942
2,307,048	Jan. 5, 1943
2,313,844	Mar. 16, 1943
2,319,824	May 25, 1943
2,321,490	June 8, 1943
2,326,592	Aug. 10, 1943
2,331,496	Oct. 12, 1943
2,331,515	Oct. 12, 1943
2,337,162	Dec. 21, 1943
2,337,215	Dec. 21, 1943
2,342,483	Feb. 22, 1944

Patent No.	Date of Issue
2,345,980	Apr. 4, 1944
2,345,985	Apr. 4, 1944
2,346,085	Apr. 4, 1944
2,346,091	Apr. 4, 1944
2,357,089	Aug. 29, 1944
2,357,101	Aug. 29, 1944
2,358,167	Sept. 12, 1944
2,361,986	Nov. 7, 1944
2,361,987	Nov. 7, 1944
2,366,047	Dec. 26, 1944
2,369,246	Feb. 13, 1945
2,369,262	Feb. 13, 1945
2,374,088	Apr. 17, 1945
2,374,114	Apr. 17, 1945
2,378,148	June 12, 1945

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Serial No.	Filing Date	Inventor
391,309	Apr. 30, 1941	H. H. Schaumann
392,941	May 10, 1941	G. R. Seidel
426,247	Jan. 9, 1942	C. M. Olson
426,248	Jan. 9, 1942	Olson & Booge
426,250	Jan. 9, 1942	Keats & Peterson
426,251	Jan. 9, 1942	J. L. Keats
449,665	July 3, 1942	C. M. Olson
449,666	July 3, 1942	C. M. Olson
449,667	July 3, 1942	C. M. Olson
472,876	Jan. 19, 1943	Olson & Krchma
483,357	Apr. 16, 1943	I. J. Krchma
502,019	Sept. 11, 1943	R. M. McKinney
521,132	Feb. 4, 1944	Booge & Seidel
521,685	Feb. 9, 1944	J. H. Peterson
521,686	Feb. 9, 1944	J. H. Peterson
537,408	May 26, 1944	R. M. McAdam

Serial No.	Filing Date	Inventor
537,409	May 26, 1944	R. M. McAdam
538,339	June 1, 1944	C. M. Olson
541,844	June 23, 1944	R. W. Sullivan
557,381	Oct. 5, 1944	R. L. McCleary
565,567	Nov. 28, 1944	G. L. Lewis
567,327	Dec. 8, 1944	E. N. Kramer
571,534	Jan. 5, 1945	W. G. Vannoy
573,804	Jan. 20, 1945	R. L. McCleary
574,033	Jan. 22, 1945	R. L. McCleary
574,831	Jan. 26, 1945	R. W. Sullivan
588,973	Apr. 18, 1945	R. M. McKinney
590,584	Apr. 27, 1945	R. D. Nutting
596,075	May 26, 1945	H. C. Gullledge
604,303	July 10, 1945	F. W. Lane